



AXIOMTEK

SHB215

**Intel® Celeron® J1900 Processor
PICMG 1.3 Half-size board**

User's Manual



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CAUTION

If you replace wrong batteries, it causes the danger of explosion. It is recommended by the manufacturer that you follow the manufacturer's instructions to only replace the same or equivalent type of battery, and dispose of used ones.

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ESD Precautions

Computer boards have integrated circuits sensitive to static electricity. To prevent chipsets from electrostatic discharge damage, please take care of the following jobs with precautions:

- Do not remove boards or integrated circuits from their anti-static packaging until you are ready to install them.
- Before holding the board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. It discharges static electricity from your body.
- Wear a wrist-grounding strap, available from most electronic component stores, when handling boards and components.

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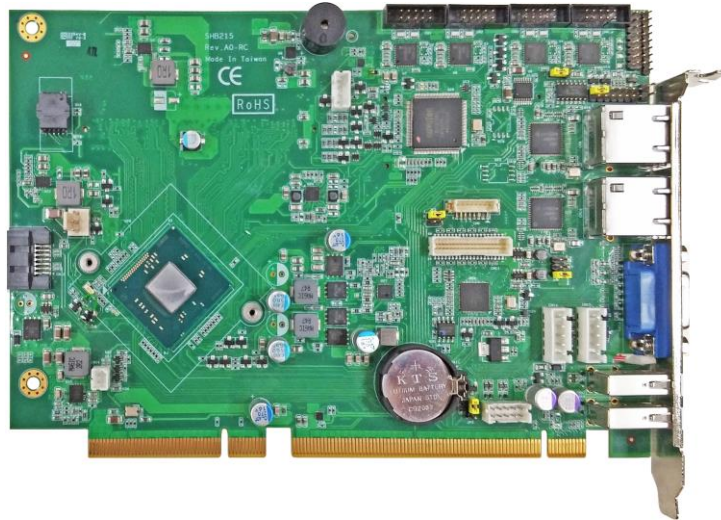
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Chapter 1

Introduction



The SHB215, a PICMG 1.3 Half-size CPU board, supports Intel® Celeron® J1900 Low Power CPU. This board integrates Intel Bay-trail platform and delivers great balance between performance and power consumptions, multiple I/O functions for interactive applications and various embedded computing solutions.

There are one 204-pin SO-DIMM sockets for single channel DDR3L-1333/1600 MHz memory, maximum memory capacity up to 8GB. It also features two Gigabit/Fast Ethernet ports, one serial ATA channels for SATA HDD/SSD at maximum transfer rate up to 3Gb/sec, four USB 2.0 high-speed compliant that can achieve the best stability and reliability for industrial applications. Additionally, it provides embedded features, such as two serial ports that apply an extensive array of PC peripherals.

1.1 Features

- Intel® Celeron® J1900 processor (BayTrail)
- Intel Bay-trail SoC
- 2 DDR3L SO-DIMM supports up to 8 GB memory capacity
- 2 USB 2.0 ports (Rear I/O)
- SATA 3Gbs
- VGA Display

1.2 Specifications

- **CPU**
 - Intel® Celeron® J1900 processor
- **System Chipset**
 - Intel® Baytrail SoC
- **BIOS**
 - AMI BIOS via SPI interface with socket
- **System Memory**
 - One 204-pin DDR3L 1333/1600MHz SO-DIMM sockets
 - Maximum up to 8GB DDR3L memory
- **Onboard Multi I/O**
 - Serial ports: two RS-232/422/485 ports with 20-pin, 1.27 pitch box-header (COM 1/2)
- **CompactFlash™ Socket**
 - One CompactFlash™ Socket
- **USB Interface**
 - Four USB ports with complies with USB2.0
- **Onboard Graphic**
 - Intel® integrated HD Graphics with Bay-trail SoC supporting VGA.
 - Memory size: Intel® DVMT 5.0 supported; pre-allocated memory for frame buffer option as OS option:
 - Resolution: Analog output - the analog port utilizes an integrated 400MHz 24-bit RAMDAC that can directly drive a standard progressive scan analog monitor up to a resolution of 2048x1536 pixels with 32-bit color at 75Hz.
 - Analog output interface: CRT from DAC output via 30-pin VGA connector on the edge; CRT always ON supported.
- **Display**
 - 1 x VGA connector
- **Ethernet**
 - Two Intel® i211 Ethernet controller with RJ-45 Connector; support 1000/100/10Mb/s.
- **Serial ATA**
 - One SATA2 ports (3Gb/s performance)
- **Audio**
 - 10-pin 2.0 box-header (Intel® HD Audio Digital Header)
- **Hardware Monitoring**
 - Monitoring temperatures, voltages and cooling fan status.
- **Watchdog Timer**
 - Reset supported; up to 256 levels.

- **Power Management**
 - ACPI(Advanced Configuration and Power Interface)
- **Expansion Interface**
 - Two PCI-Express x1 (Gen.2)
- **Form Factor**
 - PICMG 1.3 Half-size, 185 x 126 mm



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

1.3 Utilities Supported

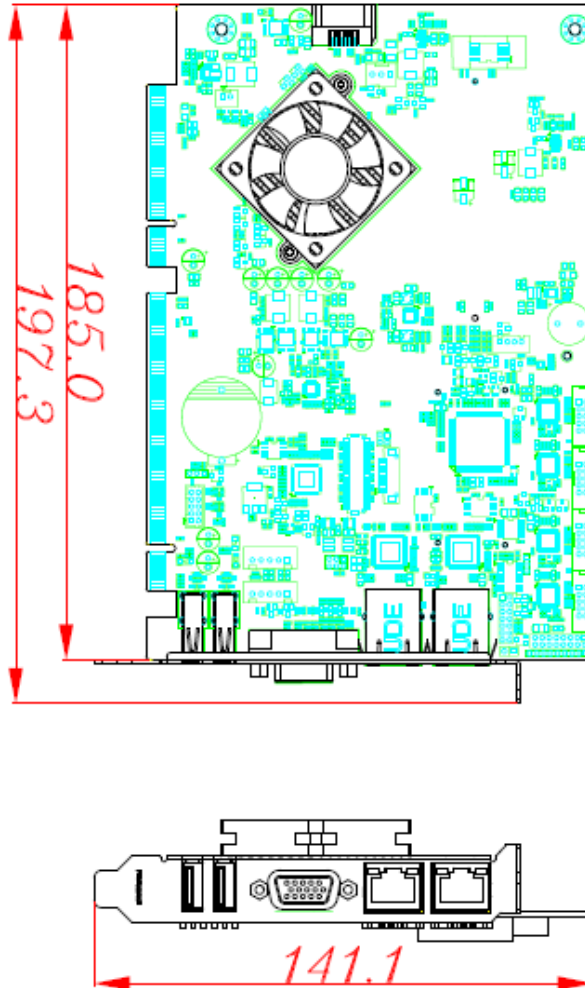
- Intel® Bay-trail SoC utility and drivers
- Graphic drivers
- Audio utility and drivers
- Ethernet utility and drivers

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Chapter 2

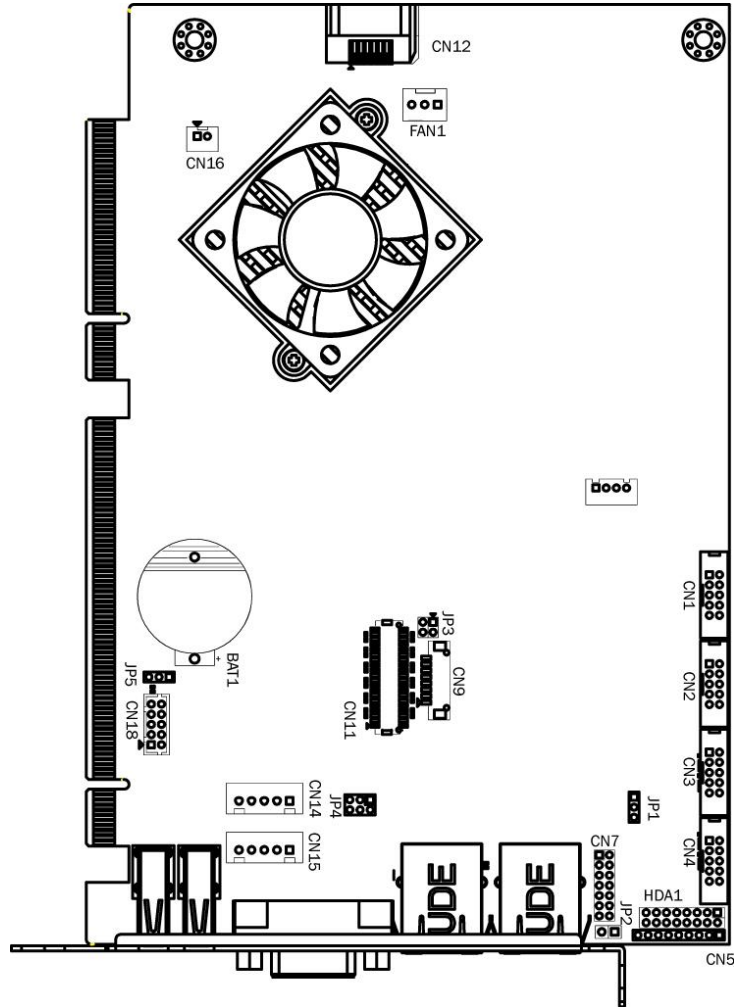
Board Layout and Pin Assignments

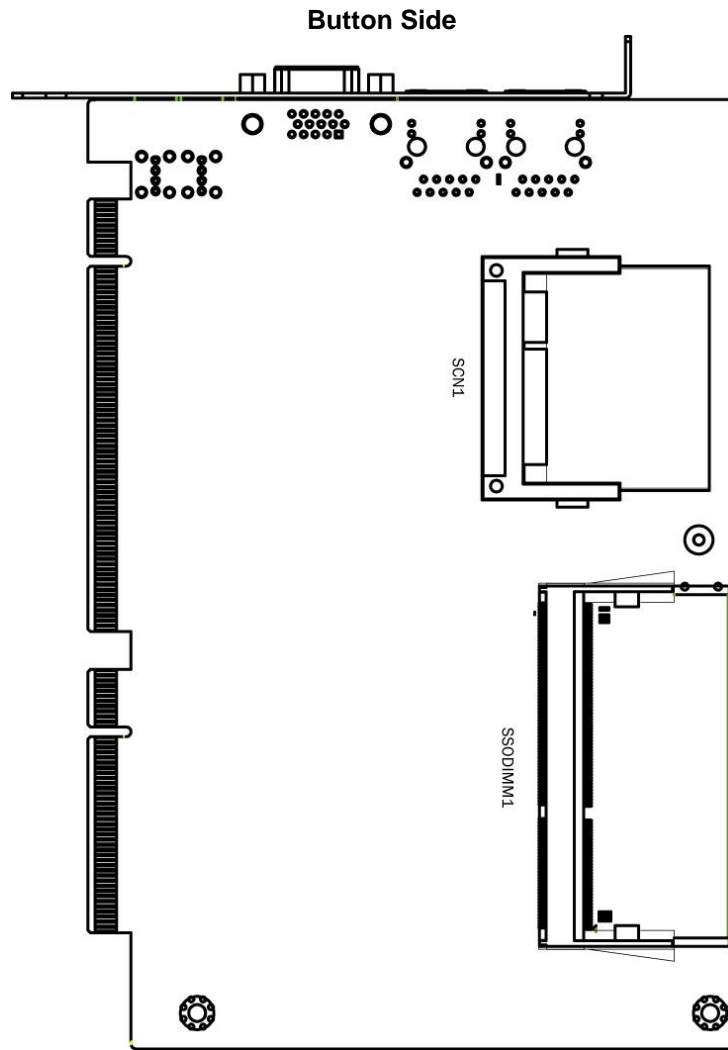
2.1 Board Dimensions and Fixing Holes



2.2 Board Layout

Top Side

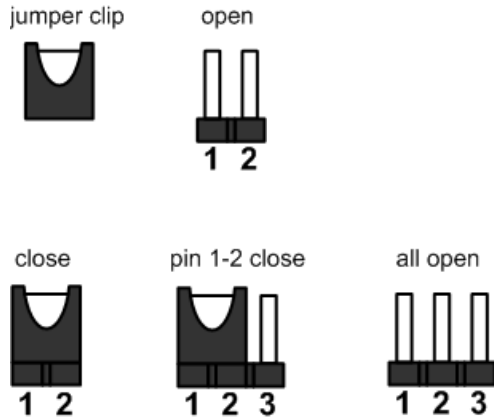




2.3 Jumper Settings

Properly configure jumper settings on the SHB215 to meet your application purpose. Below you can find a summary table of all jumpers and onboard default settings.

Proper jumper settings configure the SHB215 to meet your application purpose. We are herewith listing a summary table of all jumpers and default settings for onboard devices, respectively.

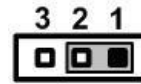


Jumper	Description	Jumper Setting
JP1	Auto Power On : Off	Short 1-2
JP3	LVDS Brightness Control : PWM Mode	Short 1-2
JP4	LVDS Voltage Selection : 3.3V	Short 5-6
JP5	Clear RTC : Normal	Short 1-2

2.3.1 Auto Power On (JP1)

If JP1 is enabled for AC power input, the system will be automatically power on without pressing soft power button. If JP1 is disabled for AC power input, it is necessary to manually press soft power button to power on the system.

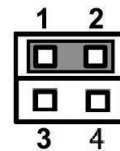
Function	Setting
Disable auto power on (Default)	1-2 close
Enable auto power on	2-3 close



2.3.2 LVDS Backlight Control Mode Setting (JP3)

This jumper is to select the Brightness Control for LVDS inverter interface.

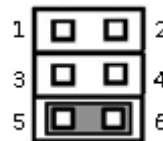
Function	Setting
PWM Mode(Default)	1-2 close
DC Mode	3-4 close



2.3.3 LVDS Voltage Selection Jumper(JP4)

This jumper is to select the voltage for LVDS interface.

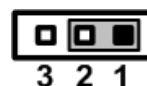
Function	Setting
+12	1-2 close
+5V	3-4 close
+3.3V (Default)	5-6 close



2.3.4 Restore BIOS Optimal Defaults (JP1)

Put jumper clip to pin 2-3 for a few seconds then move it back to pin 1-2. Doing this procedure can restore BIOS optimal defaults.

Function	Setting
Normal operation (Default)	1-2 close
Restore BIOS optimal defaults	2-3 close



2.4 Connectors

Connectors connect this board with other parts of the system. Loose or improper connection might cause problems. Make sure all connectors are properly and firmly connected.

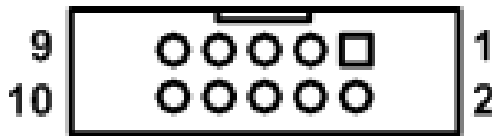
Here is a summary table shows you all connectors on the board.

Connector	Label
COM1 ~ COM4 Connecters	CN1~CN4
Axiomtek Front Panel	CN7
RJ45 (i211)	CN8 、 CN10
LVDS Connector	CN11
LVDS Inverter Connector	CN9
SATA 1	CN12
VGA Connector	CN13
PS2 Connector(Keyboard)	CN14
PS2 Connector(Mouse)	CN15
USB2.0 Port 0~1	CN17 、 CN19
USB Port 2/3	CN18
CPU FAN	FAN1
CFast™ Connector	SCN1

2.4.1 COM Connectors (CN1~CN4)

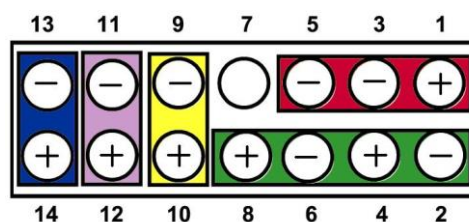
The COM port supports RS-232/RS-422/RS-485 mode operation, see table below for its pin assignments. You can change the transmission mode via BIOS setting.

Pin	RS-232	RS-422	RS-485
1	Data Carrier Detect (DCD)	TX-	DATA-
2	Data Set Ready (DSR)	No connector	No connector
3	Receive Data (RXD)	TX+	DATA+
4	Request to Send (RTS)	No connector	No connector
5	Transmit Data (TXD)	RX+	No connector
6	Clear to Send (CTS)	No connector	No connector
7	Data Terminal Ready (DTR)	RX-	No connector
8	Ring Indicator (RI)	No connector	No connector
9	Ground (GND)	GND	GND
10	Disconnect (NI)	NI	NI



2.4.2 Front Panel Connector (CN7)

Pin	Signal
1	PWRLED+
2	EXT SPK-
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+



- **Power LED**

This 3-pin connector denoted as Pin 1 and Pin 5 connects the system power LED indicator to such a switch on the case. Pin 1 is assigned as +, and Pin 5 as -. The Power LED lights up when the system is powered ON. Pin 3 is defined as GND.

- **External Speaker and Internal Buzzer Connector**

Pin 2, 4, 6 and 8 can be connected to the case-mounted speaker unit or internal buzzer. While connecting the CPU card to an internal buzzer, please short pins 2-4; while connecting to an external speaker, you need to set pins 2-4 to Open and connect the speaker cable to pin 8 (+) and pin 2 (-).

- **ATX Power On/Off Button**

This 2-pin connector denoted as Pin 9 and 10 connects the front panel's ATX power button to the CPU card, which allows users to control ATX power supply to be power on/off.

- **System Reset Switch**

Pin 11 and 12 can be connected to the case-mounted reset switch that reboots 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.

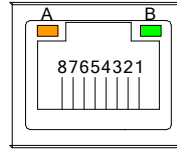
- **HDD Activity LED**

This connection is linked to hard drive activity LED on the control panel. LED flashes when HDD is being accessed. Pin 13 and 14 connect the hard disk drive to the front panel HDD LED, Pin 13 assigned as -, and Pin 14 as +.

2.4.3 Ethernet Ports (CN8 and CN10)

The board has two RJ-45 connectors; LAN1 and LAN2 (for i211AT). Ethernet connection can be established by plugging one end of the Ethernet cable into this RJ-45 connector and the other end (phone jack) to a 1000/100/10-Base-T hub.

Pin	Signal
1	Tx+ (Data transmission positive)
2	Tx- (Data transmission negative)
3	Rx+ (Data reception positive)
4	RJ-1 (For 1000-Base-T only)
5	RJ-1 (For 1000-Base-T only)
6	Rx- (Data reception negative)
7	RJ-1 (For 1000-Base-T only)
8	RJ-1 (For 1000-Base-T only)
A	Active LED
B	Speed LED

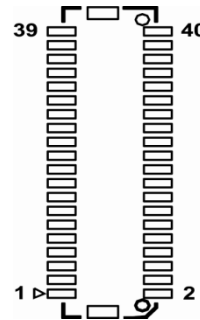


2.4.4 LVDS Connector (CN9)

This board has a 40-pin connector (CN9) for LVDS LCD interface. It is strongly recommended to use the matching JST SHDR-40VS-B 40-pin connector for LVDS interface. Pin 1~6 VCCM can be set to +3.3V or +5V level by JP4.

18-bit single channel

Pin	Signal	Pin	Signal
1	VCCM	2	VCCM
3	VCCM	4	VCCM
5	VCCM	6	VCCM
7	EDID DATA	8	EDID CLK
9	GND	10	GND
11	N.C.	12	N.C.
13	N.C.	14	N.C.
15	GND	16	GND
17	N.C.	18	N.C.
19	N.C.	20	N.C.
21	GND	22	GND
23	Channel A D0-	24	N.C.
25	Channel A D0+	26	N.C.
27	GND	28	GND
29	Channel A D1-	30	N.C.
31	Channel A D1+	32	N.C.
33	GND	34	GND
35	Channel A D2-	36	Channel A CLK-
37	Channel A D2+	38	Channel A CLK+
39	GND	40	GND



24-bit single channel

Pin	Signal	Pin	Signal
1	VCCM	2	VCCM
3	VCCM	4	VCCM
5	VCCM	6	VCCM
7	EDID DATA	8	EDID CLK
9	GND	10	GND
11	N.C.	12	N.C.
13	N.C.	14	N.C.
15	GND	16	GND
17	N.C.	18	N.C.
19	N.C.	20	N.C.
21	GND	22	GND
23	Channel A D0-	24	N.C.
25	Channel A D0+	26	N.C.
27	GND	28	GND
29	Channel A D1-	30	Channel A D3-
31	Channel A D1+	32	Channel A D3+
33	GND	34	GND
35	Channel A D2-	36	Channel A CLK-
37	Channel A D2+	38	Channel A CLK+
39	GND	40	GND

18-bit dual channel

Pin	Signal	Pin	Signal
1	VCCM	2	VCCM
3	VCCM	4	VCCM
5	VCCM	6	VCCM
7	EDID DATA	8	EDID CLK
9	GND	10	GND
11	N.C.	12	Channel B D0-
13	N.C.	14	Channel B D0+
15	GND	16	GND
17	Channel B CLK-	18	Channel B D1-
19	Channel B CLK+	20	Channel B D1+
21	GND	22	GND
23	Channel A D0-	24	Channel B D2-
25	Channel A D0+	26	Channel B D2+
27	GND	28	GND
29	Channel A D1-	30	N.C.
31	Channel A D1+	32	N.C.
33	GND	34	GND
35	Channel A D2-	36	Channel A CLK-
37	Channel A D2+	38	Channel A CLK+
39	GND	40	GND

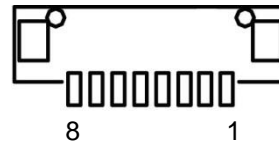
24-bit dual channel

Pin	Signal	Pin	Signal
1	VCCM	2	VCCM
3	VCCM	4	VCCM
5	VCCM	6	VCCM
7	EDID DATA	8	EDID CLK
9	GND	10	GND
11	Channel B D3-	12	Channel B D0-
13	Channel B D3+	14	Channel B D0+
15	GND	16	GND
17	Channel B CLK-	18	Channel B D1-
19	Channel B CLK+	20	Channel B D1+
21	GND	22	GND
23	Channel A D0-	24	Channel B D2-
25	Channel A D0+	26	Channel B D2+
27	GND	28	GND
29	Channel A D1-	30	Channel A D3-
31	Channel A D1+	32	Channel A D3+
33	GND	34	GND
35	Channel A D2-	36	Channel A CLK-
37	Channel A D2+	38	Channel A CLK+
39	GND	40	GND

2.4.5 Inverter Connectors (CN11)

The CN11 is DF13-8P-1.25V 8-pin connector for inverter. We strongly recommend you to use the matching DF13-8S-1.25C connector to avoid malfunction.

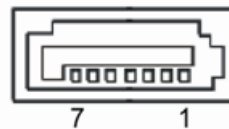
Pin	Signal
1	VBL1 (+12V level)
2	VBL1 (+12V level)
3	VBL2 (+5V level)
4	VBL_ENABLE
5	GND
6	GND
7	GND
8	LVDS_BRICTL



2.4.6 Serial ATA Connectors (CN12)

These Serial Advanced Technology Attachment (Serial ATA or SATA) connectors are for high-speed SATA interfaces. They are computer bus interfaces for connecting to devices such as hard disk drives.

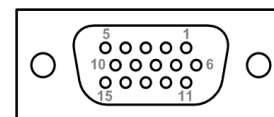
Pin	Signal
1	GND
2	SATA_TX+
3	SATA_TX-
4	GND
5	SATA_RX-
6	SATA_RX+
7	GND



2.4.7 VGA Connector (CN13)

The CN13 is a 15-pin D-Sub connector which is commonly used for CRT monitor.

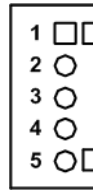
Pin	Signal	Pin	Signal
1	Red	2	Green
3	Blue	4	N.C.
5	GND	6	DETECT
7	GND	8	GND
9	VCC	10	GND
11	N.C.	12	DDC DATA
13	Horizontal Sync	14	Vertical Sync
15	DDC CLK		



2.4.8 Internal Keyboard and Mouse Connectors (CN14 and CN15)

The board comes with keyboard (CN14) and mouse (CN15) interfaces.

Pin	Signal
1	Clock
2	DATA
3	No connector
4	GND
5	5VSBY



2.4.9 External USB2.0 Connectors Port0~1(CN17、CN19)

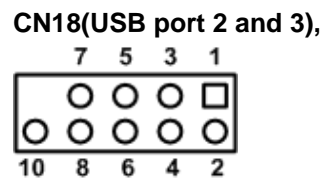
These are standard USB 2.0 connectors on rear I/O for installing USB 2.0 compliant interface peripherals.

Pin	Signal	<p>CN29</p>
1	USB POWER	
2	USB0-	
3	USB0+	
Pin	Signal	<p>CN30</p>
1	USB POWER	
2	USB1-	
3	USB1+	
4	GND	

2.4.10 Internal USB 2.0 Connectors (CN18)

These are internal connectors for USB 2.0 interfaces.

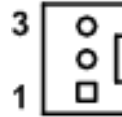
Pin	Signal	Pin	Signal
1	USB_PWR	2	USB_PWR
3	USB -	4	USB -
5	USB +	6	USB +
7	GND	8	GND
		10	GND



2.4.11 FAN Connector (FAN1)

A fan interface is available through this connector. You can find fan speed within BIOS Setup

Pin	Signal
1	GND
2	+12V level
3	Fan speed feedback



2.4.12 CompactFlash™ Socket (SCF1)

The board is equipped with a CompactFlash™ disk socket on the solder side to support an IDE2 interface CompactFlash™ disk card. The socket is especially designed to avoid incorrect installation of the CompactFlash™ disk card. When installing or removing the CompactFlash™ disk card, please make sure the system power is off. The CompactFlash™ disk card is defaulted as the C: or D: disk drive in your PC system.

Pin	Signal	Pin	Signal
1	GND	26	CD1-
2	Data 3	27	Data 11
3	Data 4	28	Data 12
4	Data 5	29	Data 13
5	Data 6	30	Data 14
6	Data 7	31	Data 15
7	CS0#	32	CS1#
8	Address 10	33	VS1#
9	ATASEL	34	IORD#
10	Address 9	35	IOWR#
11	Address 8	36	WE#
12	Address 7	37	INTR
13	VCC	38	VCC

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Chapter 3

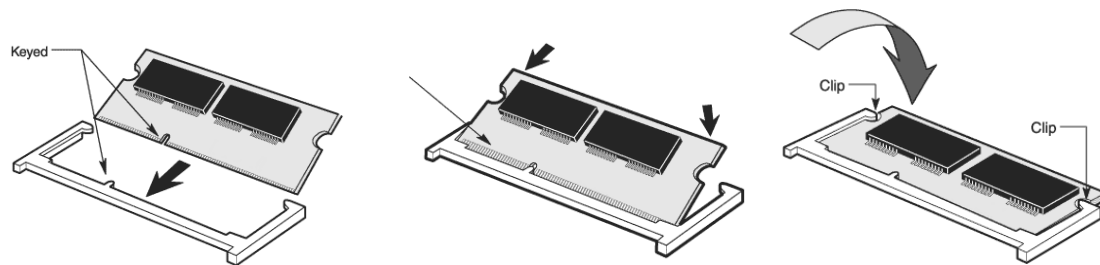
Hardware Installation

3.1 Installing the Memory

The board supports one 240-pin DDR3L SO-DIMM memory sockets with maximum memory capacity up to 8GB.

Please follow steps below to install the memory modules:

- Align the memory module with the socket that notches of memory module must match the socket keys for a correct installation.
- Install the memory module into the socket and push it firmly down until it is fully seated. The socket latches are levered upwards and clipped on to the edges of the DIMM.



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Chapter 4

AMI BIOS Setup Utility

The AMI UEFI BIOS provides users with a built-in setup program to modify basic system configuration. All configured parameters are stored in a flash chip to save the setup information whenever the power is turned off. This chapter provides users with detailed description about how to set up basic system configuration through the AMI BIOS setup utility.



Note: When you flash bios, please press power switch to reset your system.

4.1 Starting

To enter the setup screens, follow the steps below:

1. Turn on the computer and press the key immediately.
2. After you press the key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Advanced and Chipset menus.

It is strongly recommended that you should avoid changing the chipset's defaults. Both AMI and your system manufacturer have carefully set up these defaults that provide the best performance and reliability.

4.2 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>, <F2>, <Enter>, <ESC>, <Arrow> keys, and so on.



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

Hot Keys	Description
→← 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.
+– 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 Load Previous Values.
F3	The <F3> key allows you to Load 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.
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.

4.3 Main Menu

The first time you 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. System Time/Date can be set up as described below. The Main BIOS setup screen is shown below.



BIOS Information

Display the auto-detected BIOS information.

System Date/Time

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.

Access Level

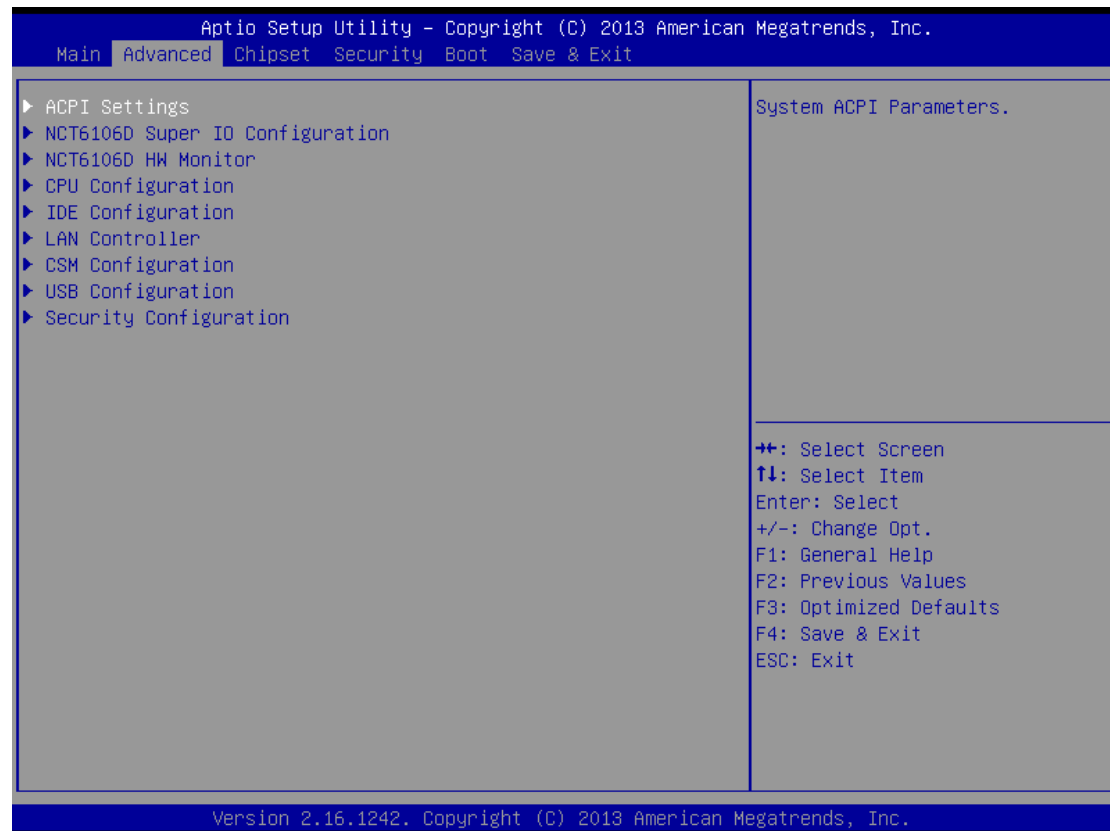
Display the access level of current user.

4.4 Advanced Menu

The Advanced menu also allows users to set 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:

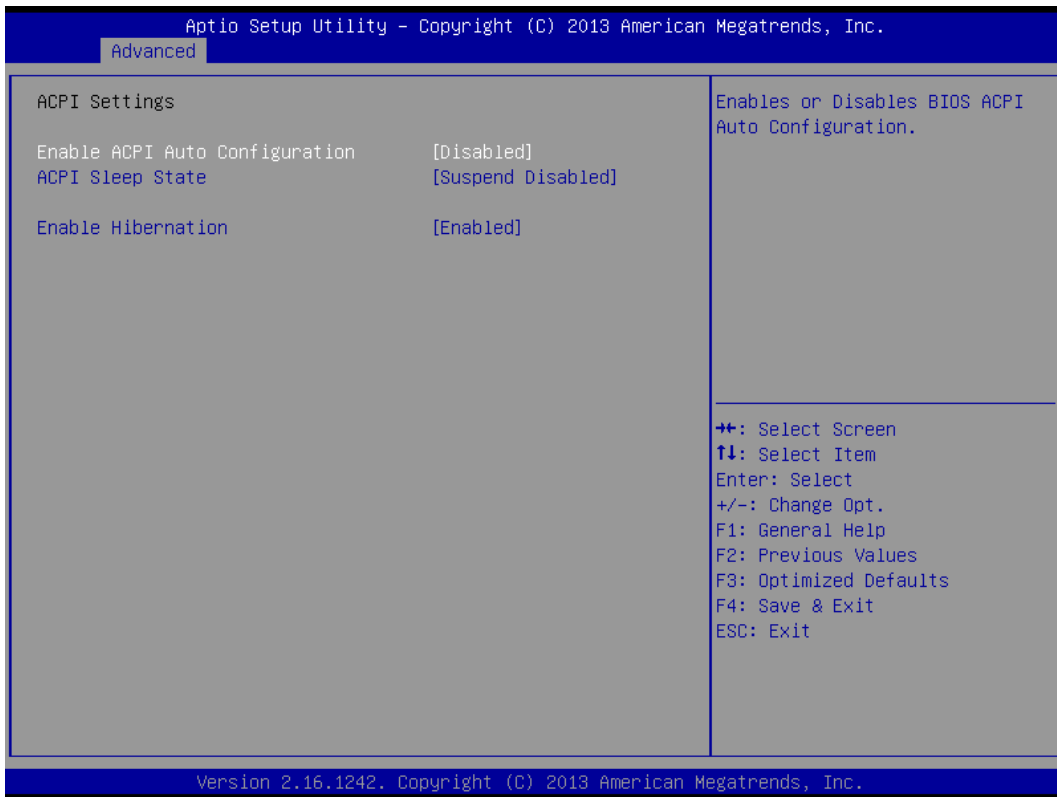
- ▶ ACPI Settings
- ▶ NCT6106D Super IO Configuration
- ▶ NCT6106D HW Monitor
- ▶ CPU Configuration
- ▶ IDE Configuration
- ▶ LAN Configuration
- ▶ CSM Configuration
- ▶ USB Configuration
- ▶ Security Configuration

For items marked with “▶”, please press <Enter> for more options.



➤ **ACPI Settings**

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



➤ **Enable ACPI Auto Configuration**

Use this item to specify the integrated ACPI Auto Configuration. There are two options for your selection: *Disabled*, and *Enabled*.

➤ **ACPI Sleep State**

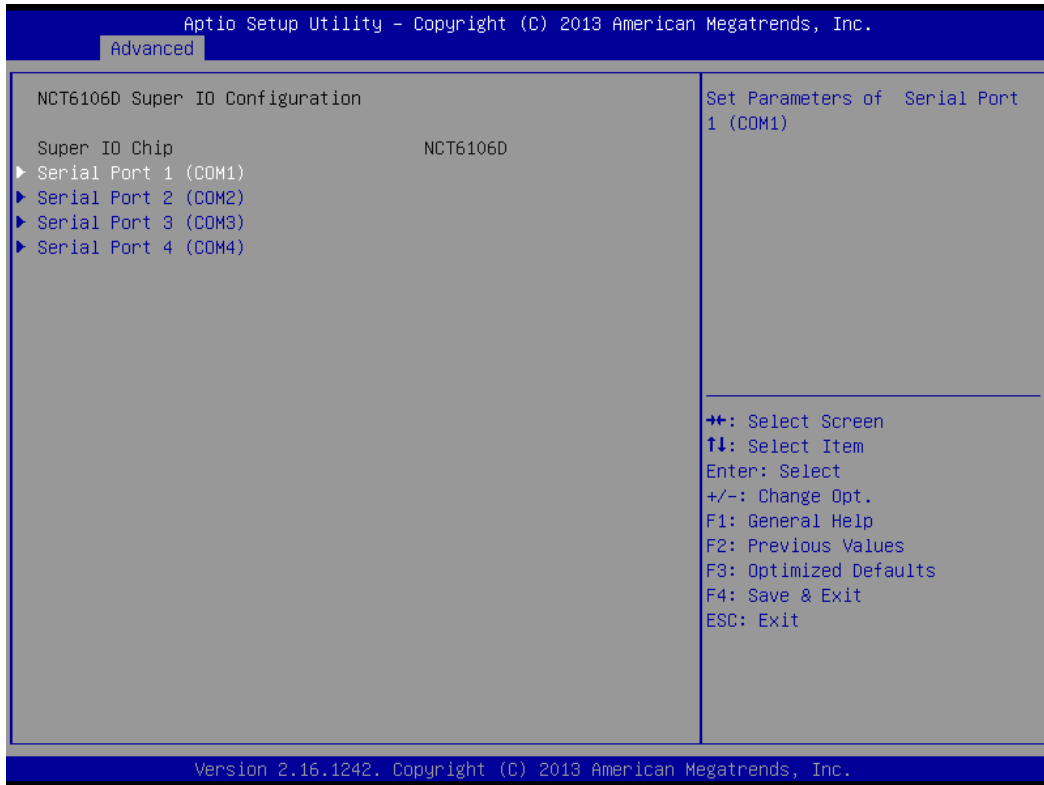
Use this item to specify the integrated ACPI Sleep State.

➤ **Enable Hibernation**

Use this item to specify the Hibernation.

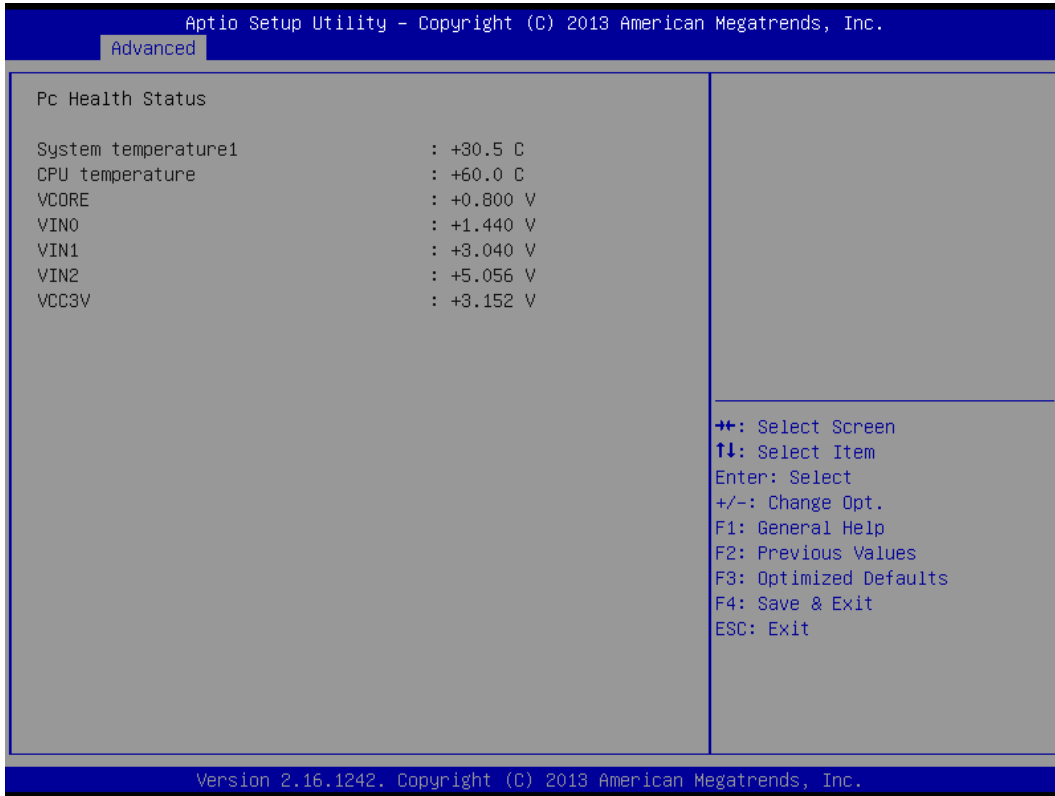
➤ **NCT6106D Super IO Configuration**

You can use this screen to select options for the Serial port, and change the value of the selected option. A description of the selected item appears on the right side of the screen. For items marked with “▶”, please press <Enter> for more options.



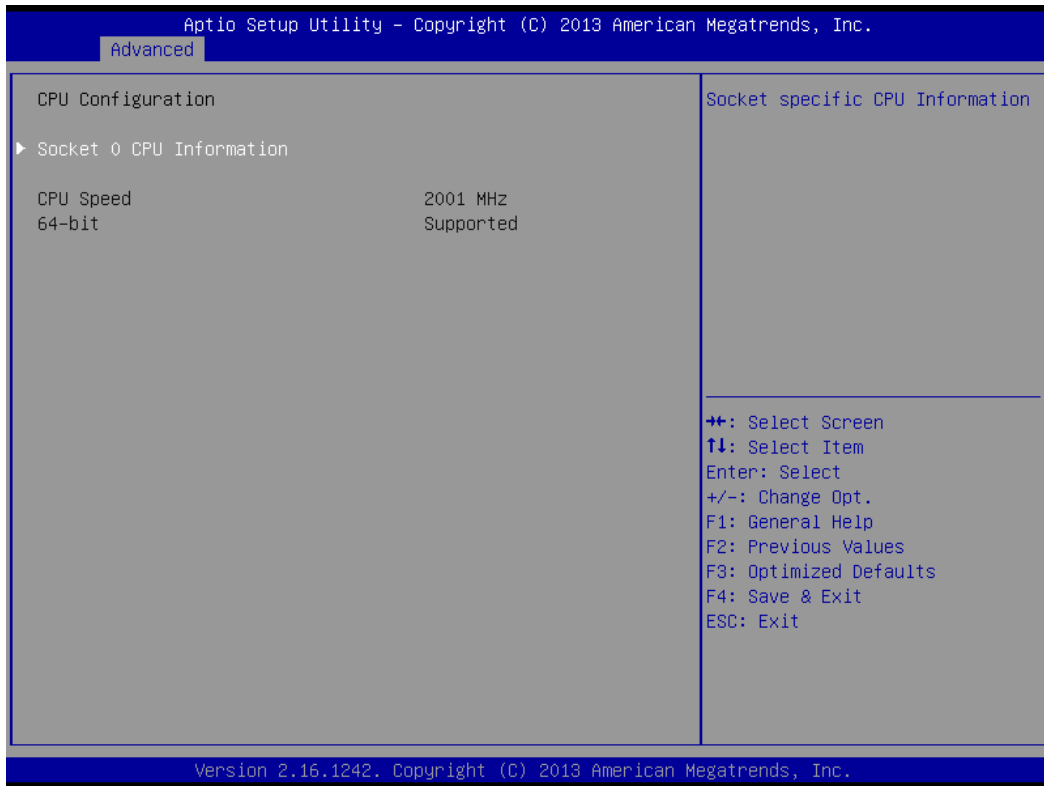
➤ **NCT6106D HW monitor**

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

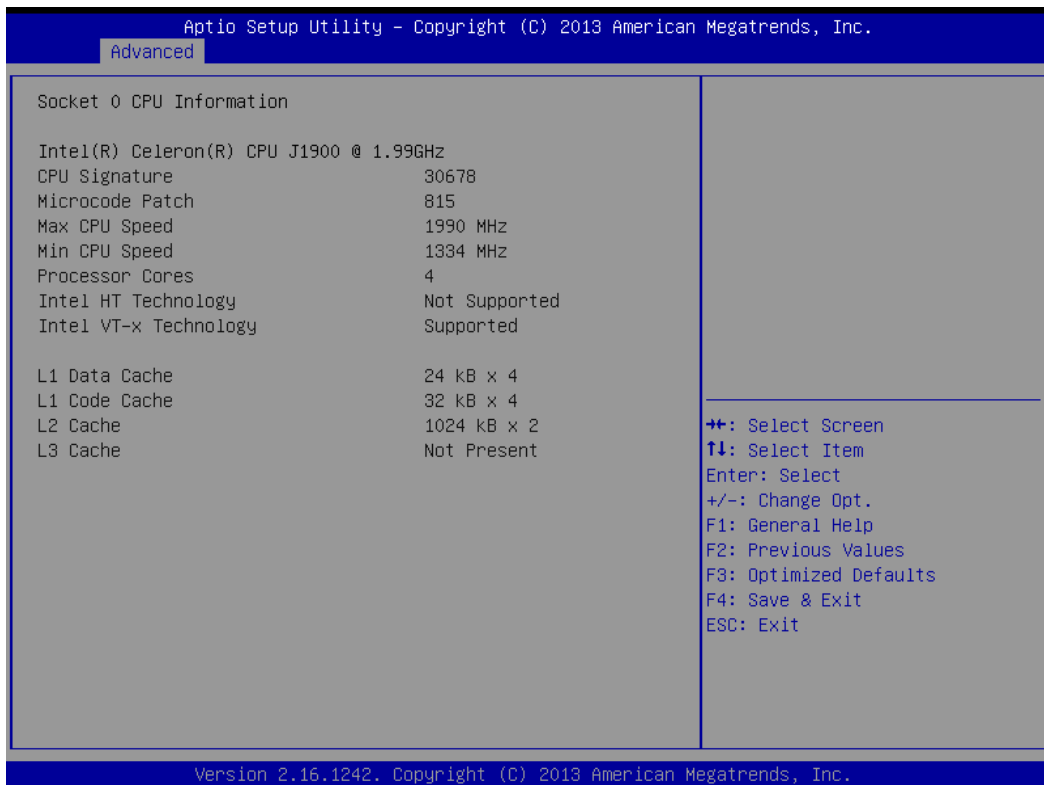


➤ **CPU Configuration**

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

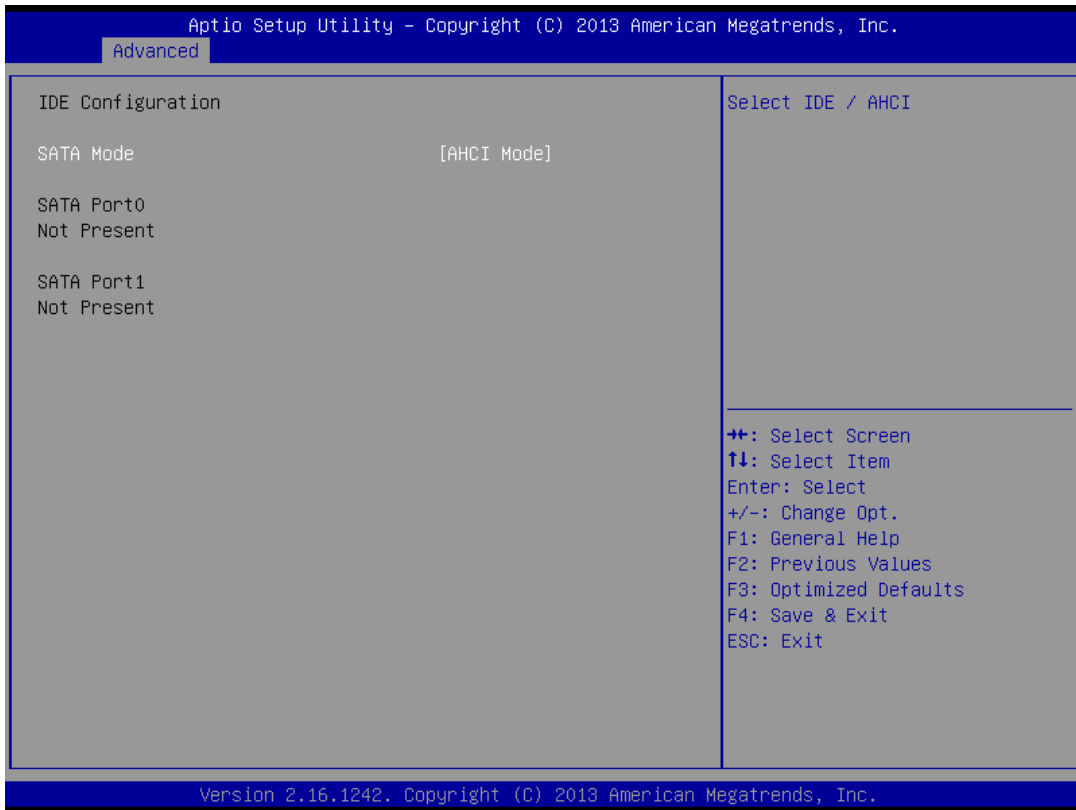


Socket 0 CPU Information



➤ **IDE Configuration**

In this Configuration menu, you can see the currently installed hardware in the SATA ports. During system boot up, the BIOS automatically detects the presence of SATA devices.

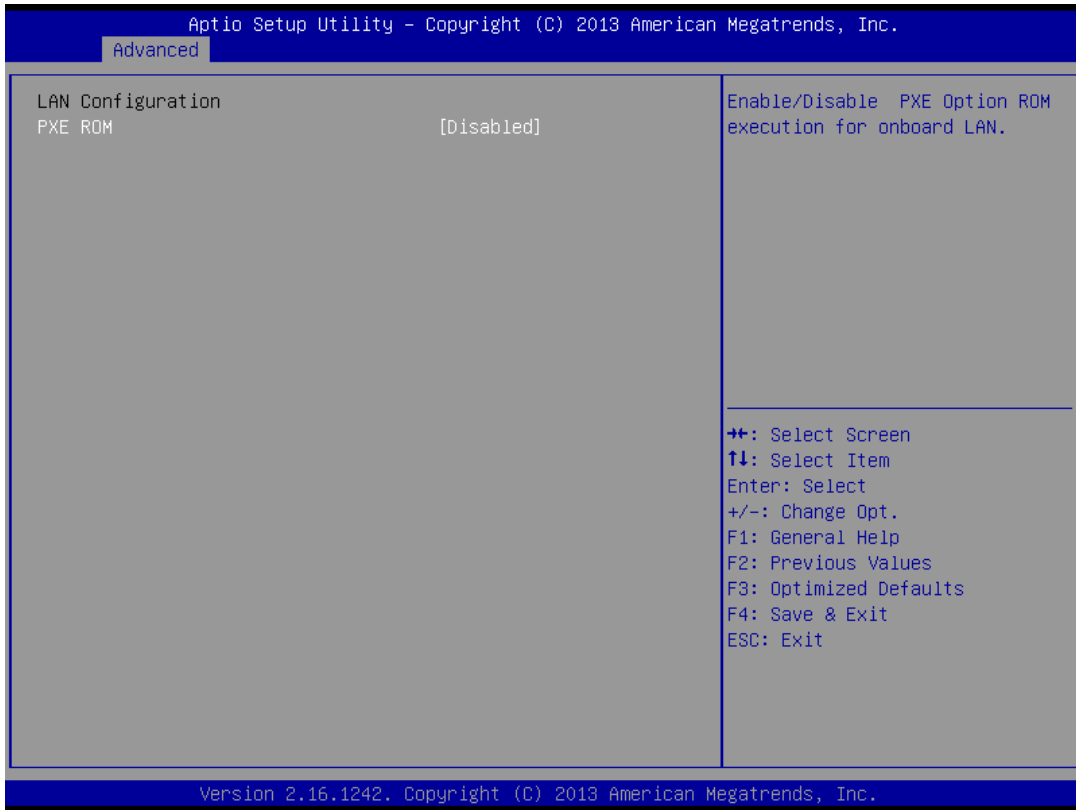


SATA Mode Selection

Determine how SATA controller(s) operate. Operation mode options are: IDE Mode, AHCI Mode and RAID Mode.

➤ **LAN Configuration**

You can use this screen to select options for the LAN Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen. For items marked with “▶”, please press <Enter> for more options.

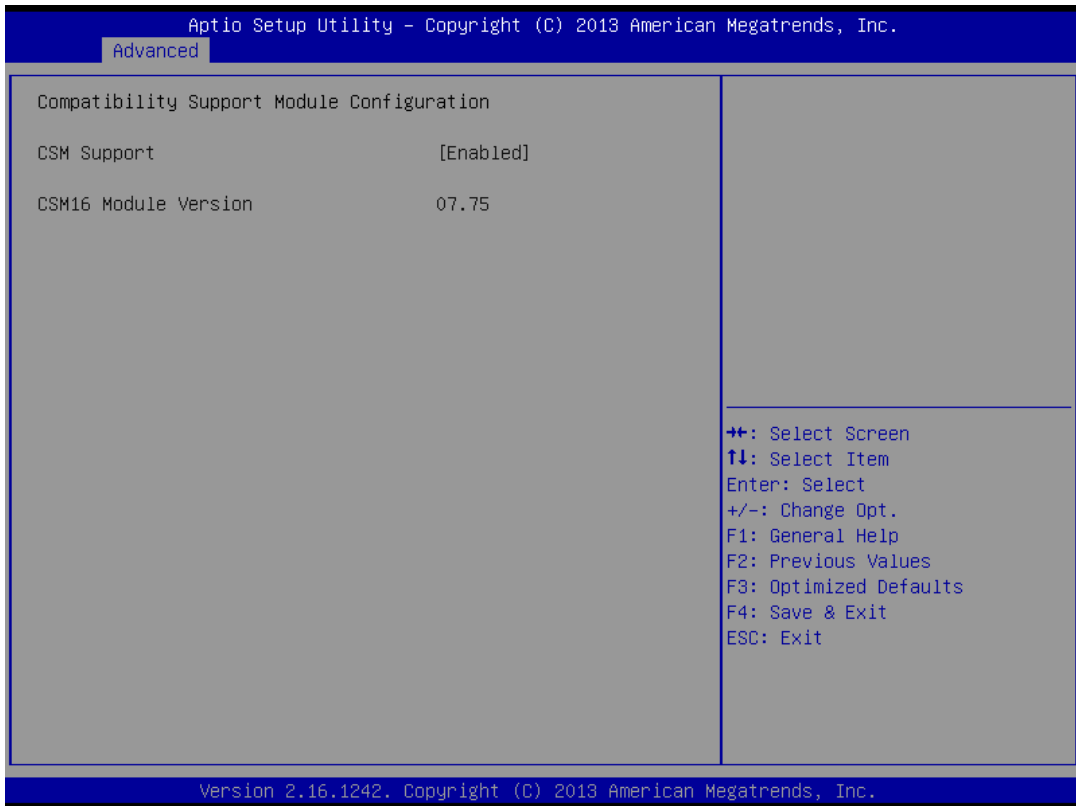


PXE ROM

Use this item to specify the integrated PXE ROM. There are two options for your selection: *Disabled*, and *Enabled*.

➤ **CSM Configuration**

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

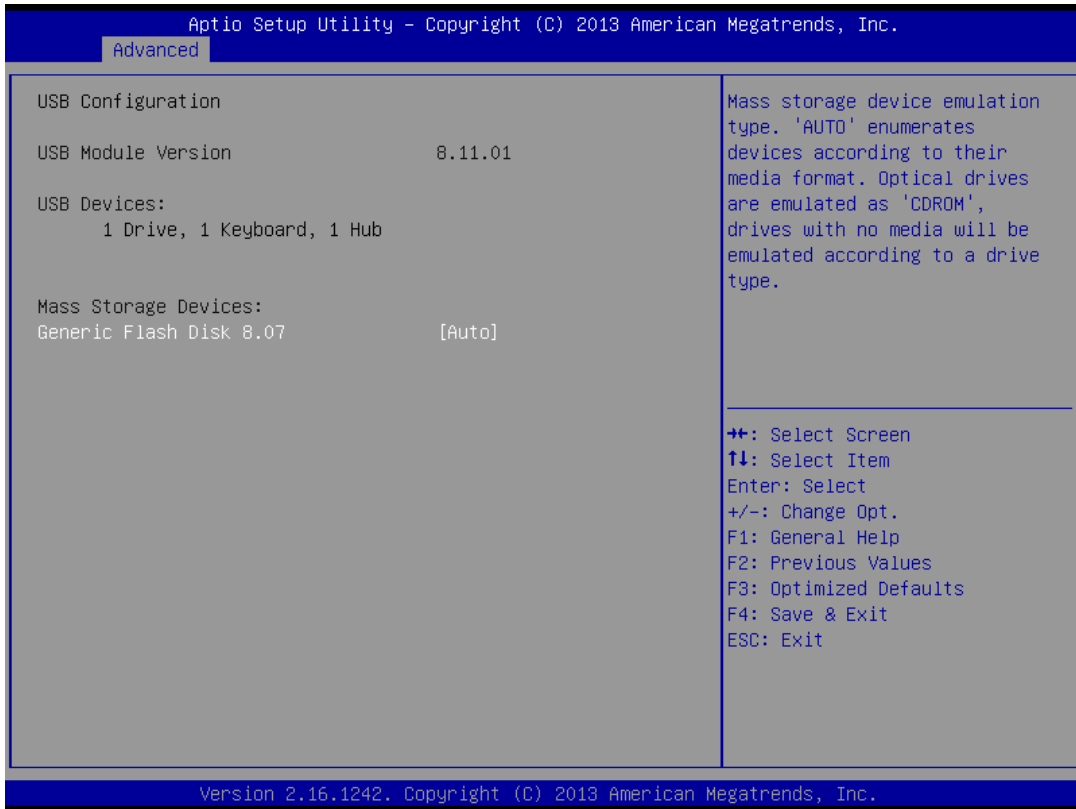


CSM Support

Use this item to specify the integrated CSM Support. There are two options for your selection: Disabled, and Enabled.

➤ **USB Configuration**

This screen displays the USB Configuration information.

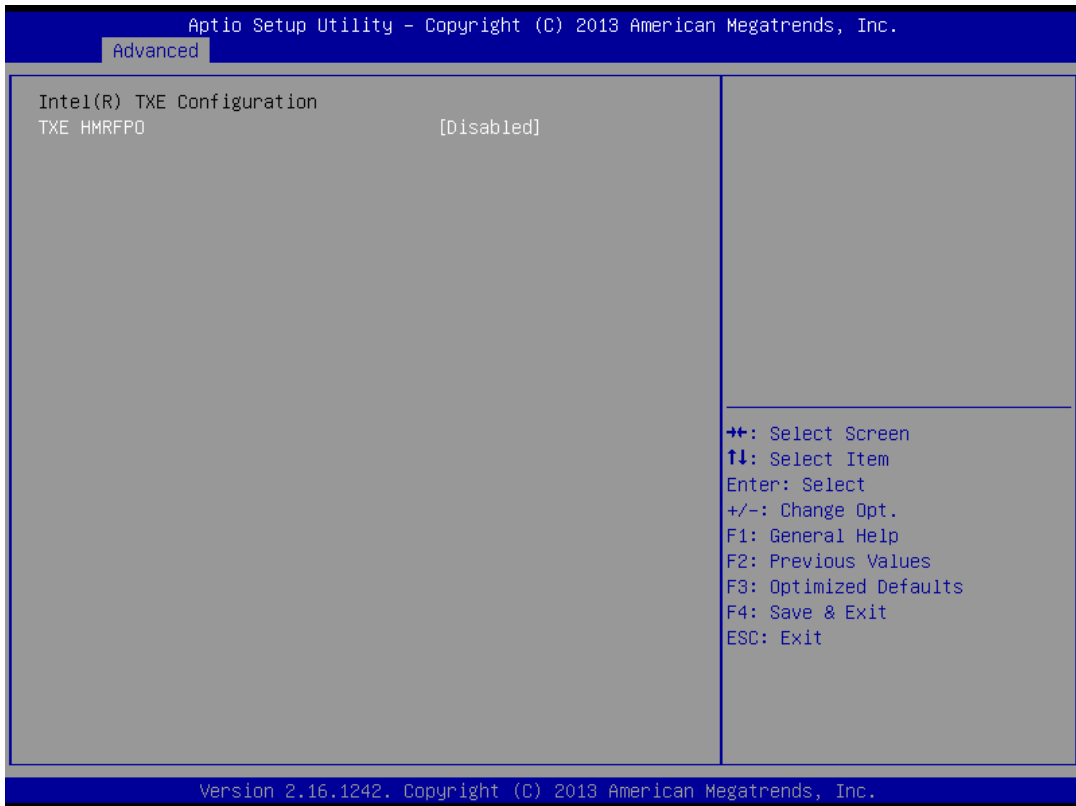


USB Devices

Display all detected USB devices.

➤ **Security Configuration**

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



TXE HMRFP0

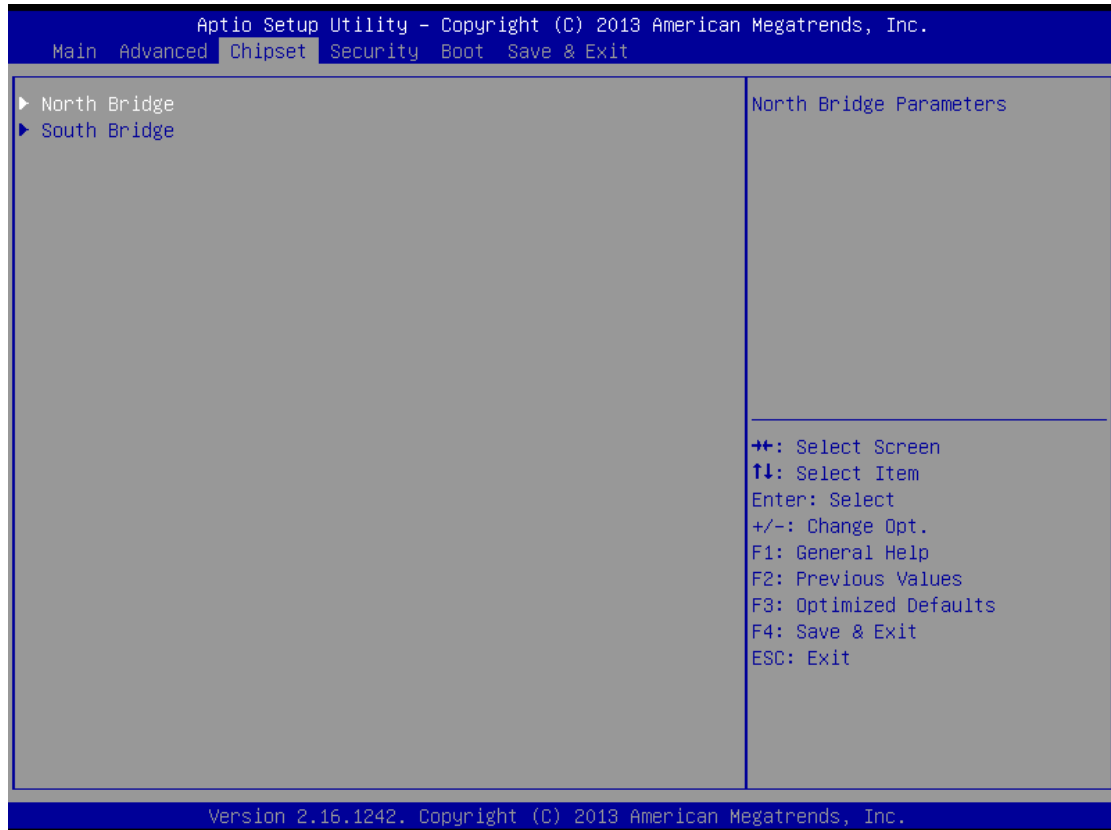
Use this item to specify the integrated TXE HMRFP0. There are two options for your selection: *Disabled*, and *Enabled*.

4.5 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:

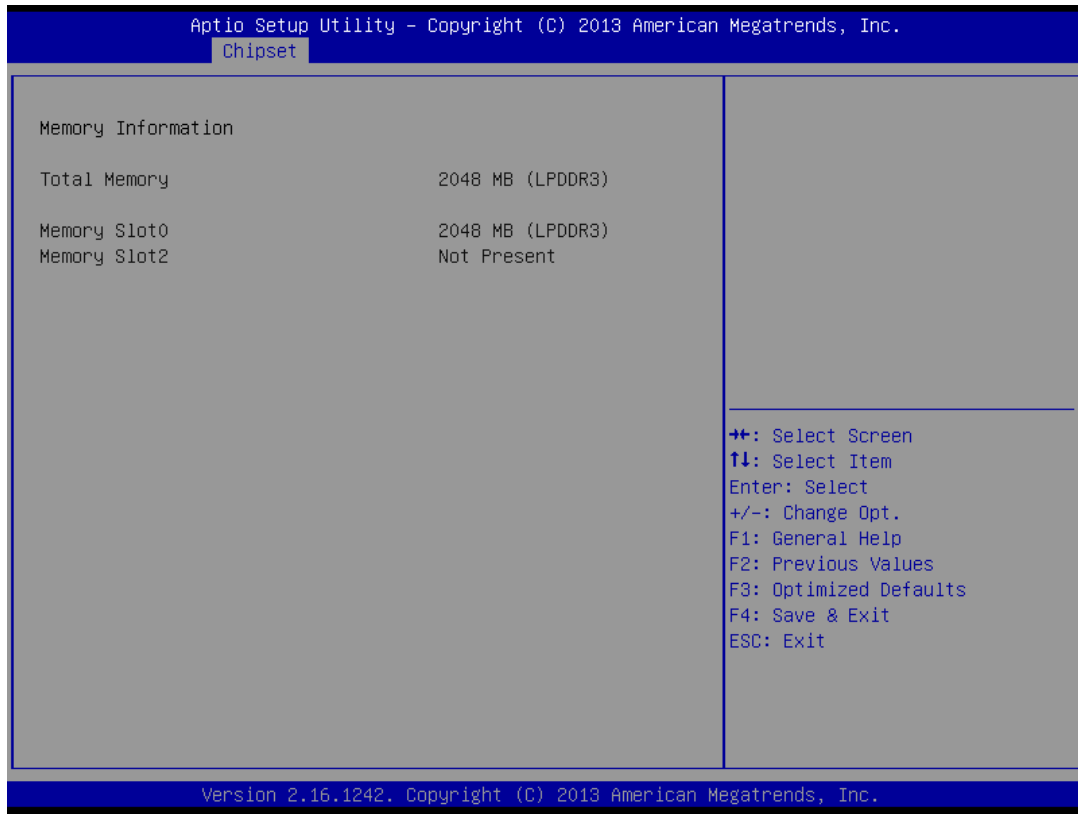
- ▶ North Bridge
- ▶ South Bridge

For items marked with “▶”, please press <Enter> for more options.



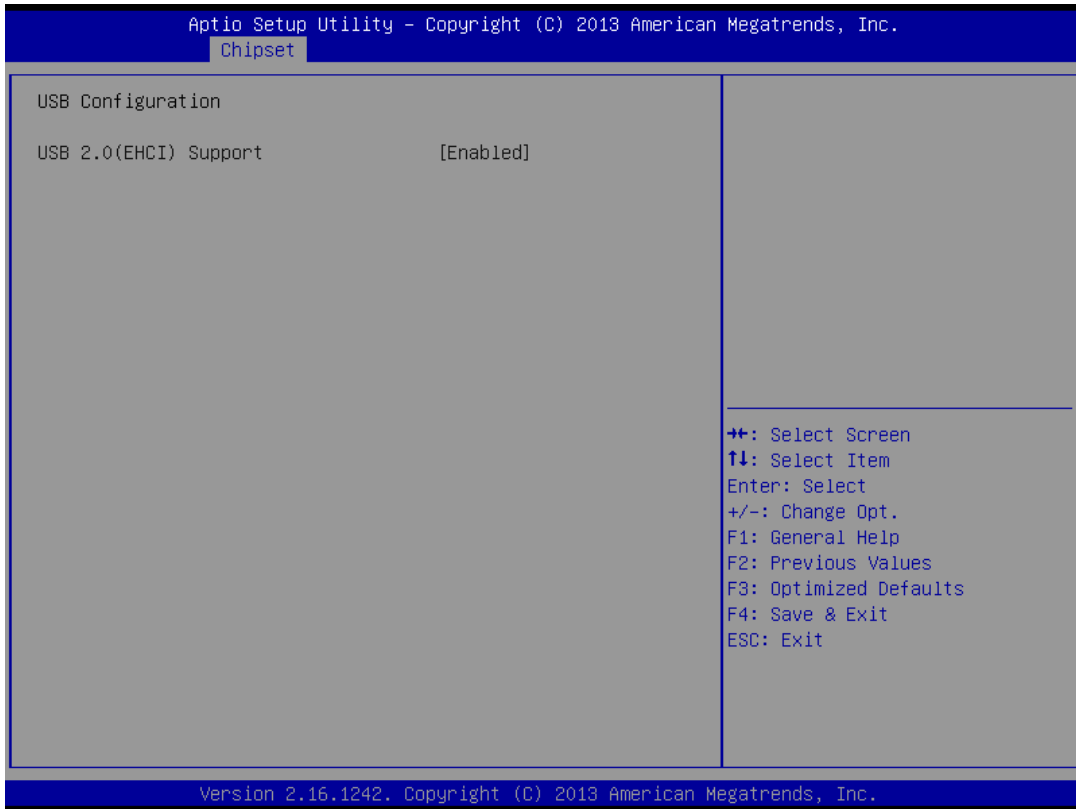
➤ **Memory Information**

This screen shows memory states.



➤ **Memory Information**

This screen allows you to set USB parameters.

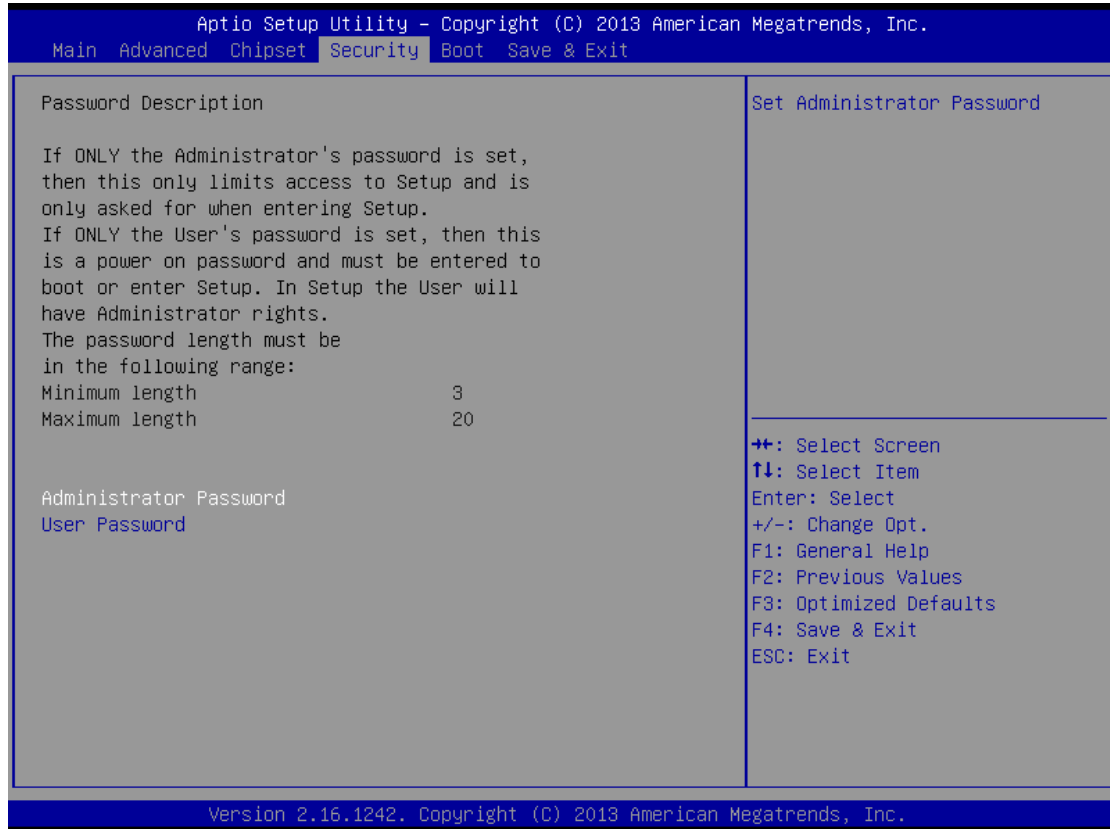


USB2.0(ECHI) Support

Use this item to enable or disable USB2.0(ECHI) settings.

4.6 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 an user password has been set (installed or uninstalled).

4.7 Boot Menu

The Boot menu allows users to change boot options of the system.



Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Use this item to select the power-on state for the keyboard NumLock.

Quiet Boot

Select to display either POST output messages or a splash screen during boot-up.

Boot Option Priorities

These are settings for boot priority. Specify the boot device priority sequence from the available devices

4.8 Save & Exit Menu

The Save & Exit menu allows users to load your system configuration with optimal or fail-safe default values.



Save Changes and Exit

When you have completed the system configuration changes, select this option to leave Setup and return to Main Menu. Select Save Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to save changes and exit.

Discard Changes and Exit

Select this option to quit Setup without making any permanent changes to the system configuration and return to Main Menu. Select Discard Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to discard changes and exit.

Save Changes and Reset

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 Reset from the Save & Exit menu and press <Enter>. Select Yes to save changes and reset.

Discard Changes and Reset

Select this option to quit Setup without making any permanent changes to the system configuration and reboot the computer. Select Discard Changes and Reset from the Save & Exit menu and press <Enter>. Select Yes to discard changes and reset.

Save Changes

When you have completed the system configuration changes, select this option to save changes. Select Save Changes from the Save & Exit menu and press <Enter>. Select Yes to save changes.

Discard Changes

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

Restore Defaults

It automatically sets all Setup options to a complete set of default settings when you select this option. Select Restore Defaults from the Save & Exit menu and press <Enter>.

Save as User Defaults

Select this option to save system configuration changes done so far as User Defaults. Select Save as User Defaults from the Save & Exit menu and press <Enter>.

Restore User Defaults

It automatically sets all Setup options to a complete set of User Defaults when you select this option. Select Restore User Defaults from the Save & Exit menu and press <Enter>.

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Appendix A

Watchdog Timer

About Watchdog Timer

After the system stops working for a while, it can be auto-reset by the watchdog timer. The integrated watchdog timer can be set up in the system reset mode by program.

How to Use Watchdog Timer

Start

↓

1. Enable Configuration:

-O 2E 87
-O 2E 87

↓

2. Select Logic device:

-O 2E 07
-O 2F 07

↓

3. Enable WDT:

-O 2E 30
-O 2F 01

↓

4. Activate WDT:

-O 2E F0
-O 2F 80

↓

5. Set base timer:

-O 2E F6
-O 2F 0A ; Set reset time. Ex: A->reset time=10sec

↓

6. Set timer unit (second or minute):

-O 2E F5
-O 2F 71 ; Set timer unit.
; Ex: 1->timer unit=second, 9->timer unit=minute

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Appendix B

PICMG® v1.3 Interface Definition

x16 PCIe Connector A			X8 PCIe Connector B		
No.	Side B	Side A	No.	Side B	Side A
1	N.C	N.C	1	+5Vaux	+5Vaux
2	GND	GND	2	GND	N.C
3	N.C	N.C	3	a_PETp8	GND
4	N.C	N.C	4	a_PETn8	GND
5	N.C	WAKE#	5	GND	a_PERp8
6	PWRBT#	PME#	6	GND	a_PERn8
7	PWRGD	PSON#	7	a_PETp9	GND
8	SHB_RST#	PERST#	8	a_PETn9	GND
9	CFG0	CFG1	9	GND	a_PERp9
10	CFG2	CFG3	10	GND	a_PERn9
11	RSVD	GND	11	N.C	GND
Mechanical Key			Mechanical Key		
12	GND	N.C	12	GND	N.C
13	b_PETp0	GND	13	a_PETp10	GND
14	b_PETn0	GND	14	a_PETn10	GND
15	GND	b_PERp0	15	GND	a_PERp10
16	GND	b_PERn0	16	GND	a_PERn10
17	b_PETp1	GND	17	a_PETp11	GND
18	b_PETn1	GND	18	a_PETn11	GND
19	GND	b_PERp1	19	GND	a_PERp11
20	GND	b_PERn1	20	GND	a_PERn11
21	b_PETp2	GND	21	a_PETp12	GND
22	b_PETn2	GND	22	a_PETn12	GND
23	GND	b_PERp2	23	GND	a_PERp12
24	GND	b_PERn2	24	GND	a_PERn12
25	b_PETp3	GND	25	a_PETp13	GND
26	b_PETn3	GND	26	a_PETn13	GND

Mechanical Key			27	GND	a_PERp13
27	GND	b_PERp3	28	GND	a_PERn13
28	GND	b_PERn3	Mechanical Key		
29	REFCLK0+	GND	29	a_PETp14	GND
30	REFCLK0-	GND	30	a_PETn14	GND
31	GND	REFCLK1+	31	GND	a_PERp14
32	RSVD	REFCLK1-	32	GND	a_PERn14
33	REFCLK2+	GND	33	a_PETp15	GND
34	REFCLK2-	GND	34	a_PETn15	GND
35	GND	REFCLK3+	35	GND	a_PERp15
36	RSVD	REFCLK3-	36	GND	a_PERn15
37	REFCLK4+	GND	37	N.C	GND
38	REFCLK4-	GND	38	N.C	N.C
39	GND	N.C	39	GND	GND
40	RSVD	N.C	40	GND	GND
41	N.C	GND	41	GND	GND
42	N.C	GND	42	GND	GND
43	GND	N.C	43	GND	GND
44	GND	N.C	44	+12V	+12V
45	a_PETp0	GND	45	+12V	+12V
46	a_PETn0	GND	46	+12V	+12V
47	GND	a_PERp0	47	+12V	+12V
48	GND	a_PERn0	48	+12V	+12V
49	a_PETp1	GND	49	+12V	+12V
50	a_PETn1	GND			
51	GND	a_PERp1			
52	GND	a_PERn1			
53	a_PETp2	GND			
54	a_PETn2	GND			
55	GND	a_PERp2			
56	GND	a_PERn2			
57	a_PETp3	GND			

Mechanical Key		
58	a_PETn3	GND
59	GND	a_PERp3
60	GND	a_PERn3
61	a_PETp4	GND
62	a_PETn4	GND
63	GND	a_PERp4
64	GND	a_PERn4
65	a_PETp5	GND
66	a_PETn5	GND
67	GND	a_PERp5
68	GND	a_PERn5
69	a_PETp6	GND
70	a_PETn6	GND
71	GND	a_PERp6
72	GND	a_PERn6
73	a_PETp7	GND
74	a_PETn7	GND
75	GND	a_PERp7
76	GND	a_PERn7
77	N.C	GND
78	+3.3V	+3.3V
79	+3.3V	+3.3V
80	+3.3V	+3.3V
81	+3.3V	+3.3V
82	RSVD	RSVD



Note: Please contact your vendor to get the backplane design guide if it's required. The backplane design guide is NDA required.

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