AXIOMTEK

IMB206 Series

Intel® Socket 1155 Core™ i7 / Core™ i5 / Core™ i3 / Pentium® / Celeron® ProcessorATX Industrial Motherboard

User's Manual

RoHS

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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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Chapter 1
Introduction

The IMB206 ATX industrial motherboard supports LGA1155 socket for Intel® Core™ i7 / Core™ i5 / Core™ i3 / Pentium® / Celeron® processors with 32/22nm technology .The board integrates Intel® Q67 that delivers outstanding system performance through high-bandwidth interfaces, multiple I/O functions for interactive applications and various embedded computing solutions. There are four 240-pin DDR3 DIMM sockets for dual channel architecture DDR3 1066/1333MHz non-ECC memory, maximum memory capacity up to 16GB. The board also features Gigabit Ethernet, three Serial ATA 2.0 ports at maximum transfer rate up to 3Gb/s, and two Serial ATA 3.0 ports at maximum transfer rate up to 6Gb/s with SATA RAID 0/1/5/10 by Q67. Twelve USB 2.0 high speed compliant ports and built-in Intel® HD audio can achieve the best stability and reliability for industrial applications.

1.1 Features

- LGA1155 Intel® 2nd generation Core DT processors
- 4 DDR3 1066/1333MHz
- Dual View (2 x DisplayPort + 1 x DVI-I or VGA)
- PCI-Express Gen. 2 at 5GT/s
- Supports SATA-600
- 12 USB 2.0 ports
- CFast™
- TPM
- iAMT 7.0

1.2 Specifications

- **CPU**
  - Intel® Core™ i7 / Core™ i5 / Core™ i3 / Pentium® / Celeron® processors.
  - Supports Intel® Turbo Boost Technology (see *Note 1* below).

- **System Chipset**
  - Intel® Q67 Express chipset.

- **CPU Socket**
  - LGA1155 socket.

- **BIOS**
  - AMI BIOS via 64Mb SPI Flash with socket.

- **System Memory**
  - Four 240-pin DDR3 DIMM sockets.
  - Maximum up to 16GB DDR3 memory.
  - Supports 1066/1333MHz non-ECC memory.

- **L3 Cache**
  - Varies with CPU.

- **Onboard Multi I/O**
  - Controller: Novation NCT6627UD.
  - Four serial ports: Double-deck D-Sub with DVI-I connector on the rear I/O for COM1 and 2x5 pin 2.0 pitch box header for COM2/3/4. COM1 supports RS-232/422/485 and other ports support RS-232 only. All ports are powered with +5V/+12V.

- **USB Interface**
  - Twelve USB ports (four ports on the rear I/O, eight ports on 2x5 pin 2.54 pitch box header).
  - All the USB ports support USB 2.0 compliant only

- **Onboard Graphics**
  - Intel® integrated Graphics Processing Unit (GPU) processor which goes with Intel® Q67 chipset with DisplayPort and DVI-I output (see *Note 2* below).
  - Memory size – Intel® DVMT 5.0 supported.
  - Resolution – DVI-I output supports up to 1920x1200 pixels with 32-bit color at 60Hz and DisplayPort output supports up to 2560x1600 at 60Hz.
  - Output Interface – DVI-I from DAC output via 30-pin DVI-I connector and DisplayPort from DAC output via DisplayPort connector on the rear I/O.

- **Ethernet**
  - LAN1 – Intel® 82579LM PHY supports 10/100/1000 Base-T Gigabit Ethernet, RJ-45 connector on the rear I/O with 5-pin 2.0 pitch wafer for LED. Also with iAMT 7.0 supported.
  - LAN2 – Intel® 82583V NIC, supports 10/100/1000 Base-T Gigabit Ethernet, RJ-45 connector on the rear I/O with 5-pin 2.0 pitch wafer for LED.

- **Serial ATA**
  - Three Serial ATA 2.0 ports (3Gb/s performance) and two Serial ATA 3.0 ports (6Gb/s performance) with SATA RAID 0/1/5/10 by Intel® Q67.

- **Audio**
  - HD audio codec (Realtek ALC662) for line/speaker-out and MIC-in on the rear I/O triple-deck connector, with LM1877 audio amplifier.
  - Supports jack-detection.
  - Supports CD-in.

- **Expansion Slot**
  - One PCI-Express x16 slot.
  - One PCI-Express x4 slot.
  - Two PCI-Express x1 slot.
  - Three PCI slots (32bit/33MHz)

- **CFast™ Socket**
  - One CFast™ Socket.

- **Watchdog Timer**
  - Reset supported (1~255 levels).

Note:

1. ***Intel supports Turbo Boost Technology depends on the CPU types.***
2. ***When the onboard Display Port and DVI-I ports are used, you must install Intel CPU with integrated graphics.***
3. ***Due to Windows 32-bit operating system limitation, when more than 4GB of physical memory is installed, the actual memory size displayed will be less than 4GB.***
4. ***Please load Optimal Defaults after installing or uninstalling discrete graphics card on PCIe x16 slot.***
5. ***All specifications and images are subject to change without notice.***

1.3 Utilities Supported

- Intel® chipset drivers
- Intel® graphics drivers
- Ethernet utility and drivers
- HD audio drivers
- RAID utility
- iAMT utility and drivers
- TPM utility

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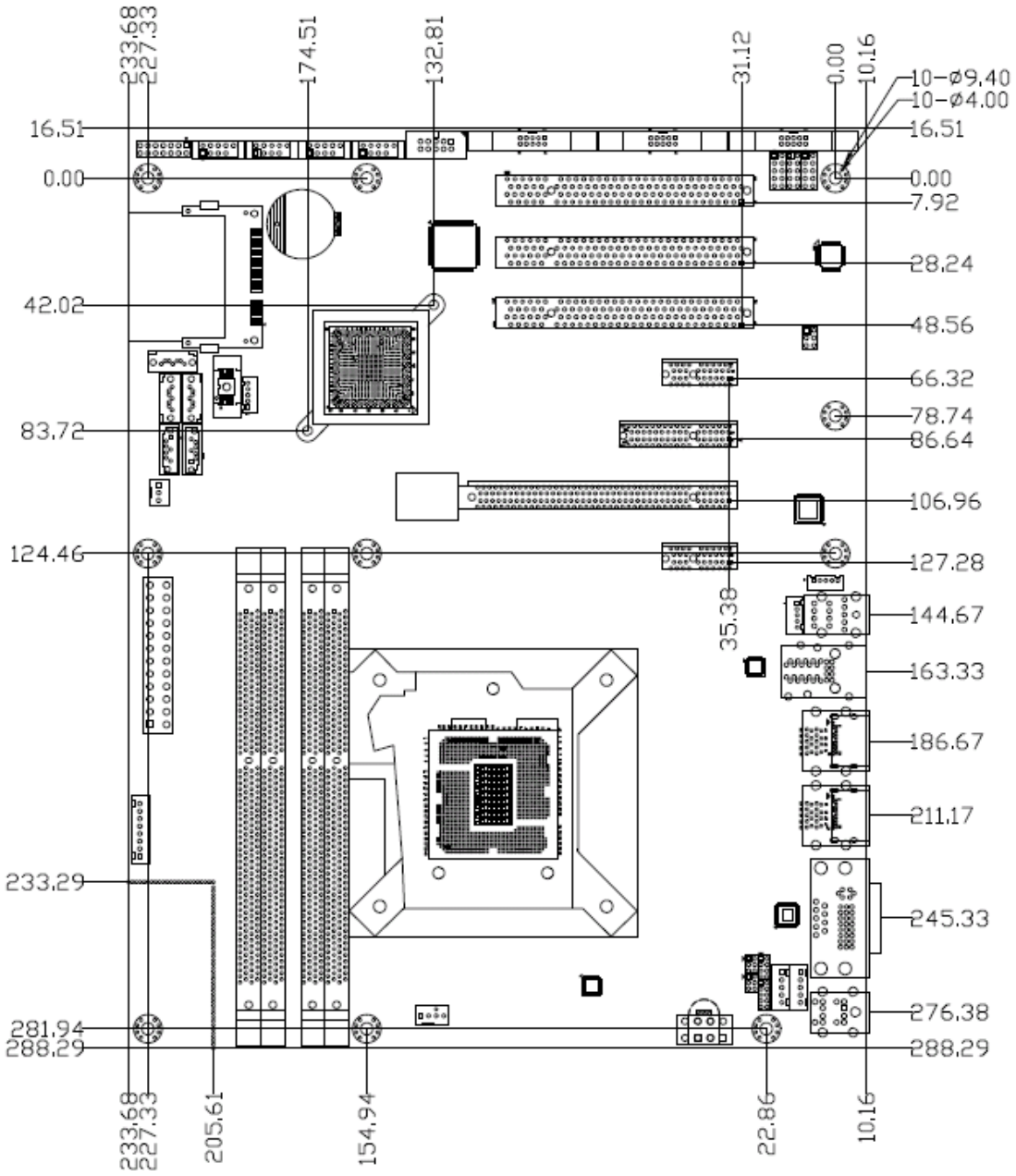
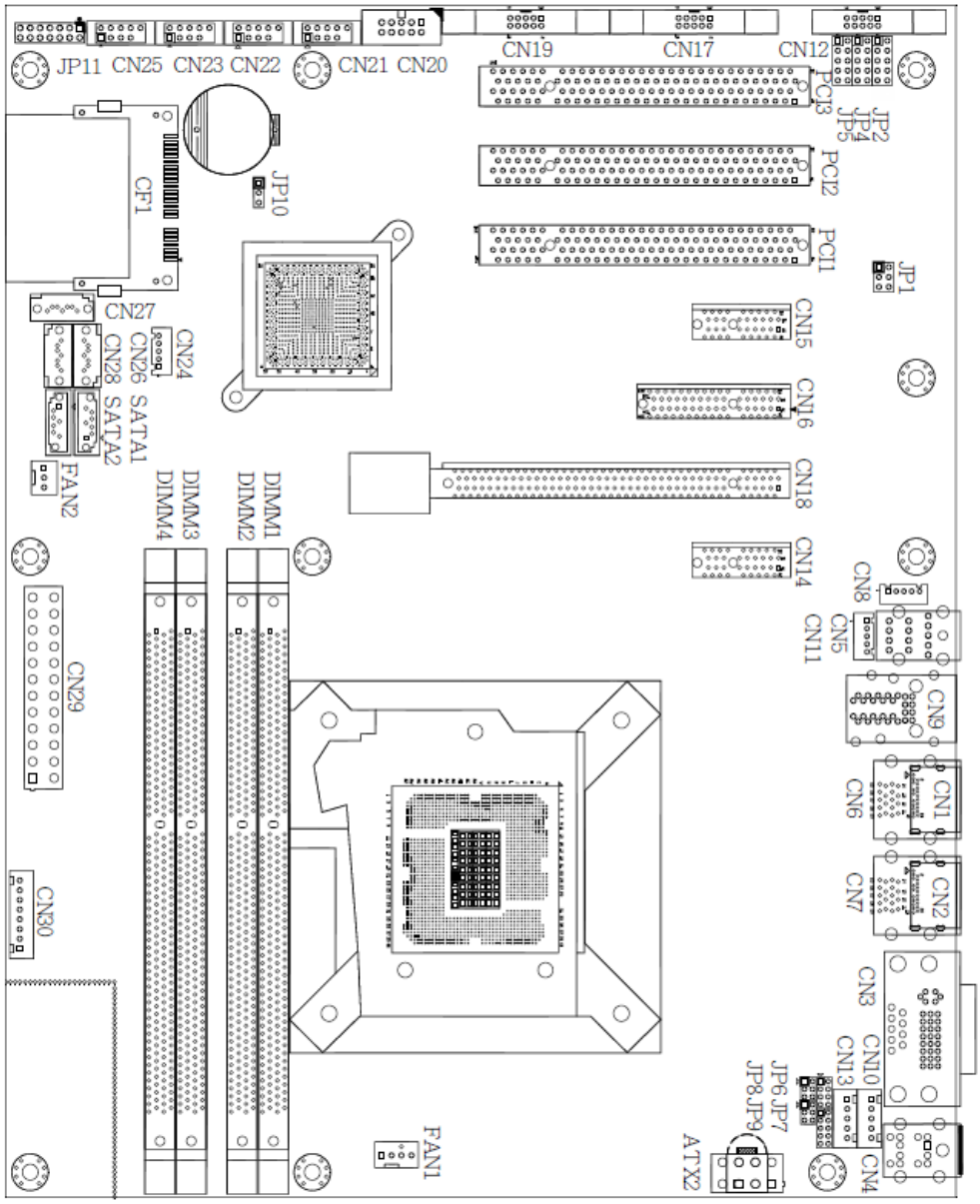
Chapter 2
Board and Pin Assignments

2.1 Board Dimensions and Fixing Holes



Top Side

2.2 Board Layout



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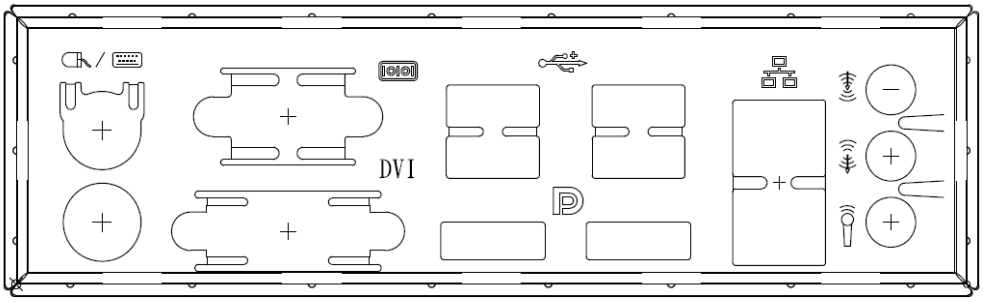
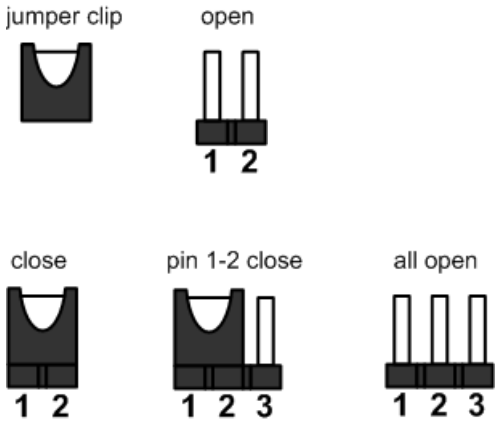


I/O Bracket

2.3 Jumper Settings

Jumper is a small component consisting of jumper clip and jumper pins. Install jumper clip on 2 jumper pins to close. And remove jumper clip from 2 jumper pins to open. The following illustration shows how to set up jumper.



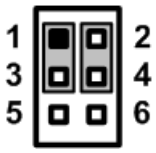
Before applying power to IMB206 Series, please make sure all of the jumpers are in factory default position. Below you can find a summary table of all jumpers and onboard default settings.

Jumper	Description		Jumper Setting
JP1	Audio Output Selection Default: Line-out		1-3, 2-4 close
JP2	COM2 Data/Power Selection Default: RS-232 Data	CN12 Pin 1: DCD	7-9 close
		CN12 Pin 8: RI	8-10 close
JP4	COM3 Data/Power Selection Default: RS-232 Data	CN17 Pin 1: DCD	7-9 close
		CN17 Pin 8: RI	8-10 close
JP5	COM4 Data/Power Selection Default: RS-232 Data	CN19 Pin 1: DCD	7-9 close
		CN19 Pin 8: RI	8-10 close
JP7	COM1 Data/Power Selection Default: RS-232 Data	CN3A Pin 1: DCD	7-9 close
		CN3A Pin 9: RI	8-10 close
JP6	COM1 RS-232/422/485 Mode Setting Default: RS-232		1-2 close
JP8			3-5, 4-6 close
JP9			3-5, 4-6 close
JP10	Restore BIOS Optimal Defaults Default: Normal Operation		1-2 close

2.3.1 Audio Output Selection (JP1)

JP1 is for user to select line-out or speaker-out as source for audio output on CN5. When speaker-out is used, it delivers 2W/channel continuous into 8 Ohm loads.

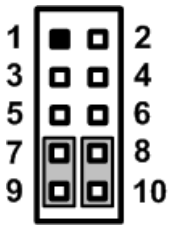
Function	Setting
Line out (Default)	1-3, 2-4 close
Speaker out (w/ amplifier)	3-5, 4-6 close



2.3.2 COM2 Data/Power Selection (JP2)

The COM2 port has +5V or +12V power capability on DCD and RI by setting this jumper.

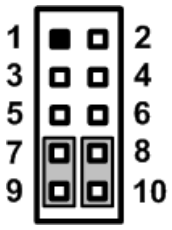
Function	Setting
Power: Set CN12 pin 1 to +12V	1-3 close
Power: Set CN12 pin 1 to +5V	5-7 close
Data: Set CN12 pin 1 to DCD (Default)	7-9 close
Power: Set CN12 pin 8 to +12V	2-4 close
Power: Set CN12 pin 8 to +5V	6-8 close
Data: Set CN12 pin 8 to RI (Default)	8-10 close



2.3.3 COM3 Data/Power Selection (JP4)

The COM3 port has +5V or +12V power capability on DCD and RI by setting this jumper.

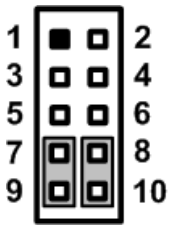
Function	Setting
Power: Set CN17 pin 1 to +12V	1-3 close
Power: Set CN17 pin 1 to +5V	5-7 close
Data: Set CN17 pin 1 to DCD (Default)	7-9 close
Power: Set CN17 pin 8 to +12V	2-4 close
Power: Set CN17 pin 8 to +5V	6-8 close
Data: Set CN17 pin 8 to RI (Default)	8-10 close



2.3.4 COM4 Data/Power Selection (JP5)

The COM4 port has +5V or +12V power capability on DCD and RI by setting this jumper.

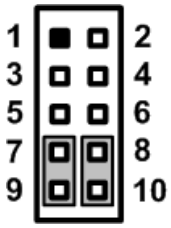
Function	Setting
Power: Set CN19 pin 1 to +12V	1-3 close
Power: Set CN19 pin 1 to +5V	5-7 close
Data: Set CN19 pin 1 to DCD (Default)	7-9 close
Power: Set CN19 pin 8 to +12V	2-4 close
Power: Set CN19 pin 8 to +5V	6-8 close
Data: Set CN19 pin 8 to RI (Default)	8-10 close



2.3.5 COM1 Data/Power Selection (JP7)

The COM1 port has +5V or +12V power capability on DCD and RI by setting this jumper. When COM1 is set to +5V or +12V, please make sure its communication mode is RS-232 (see section 2.3.6).

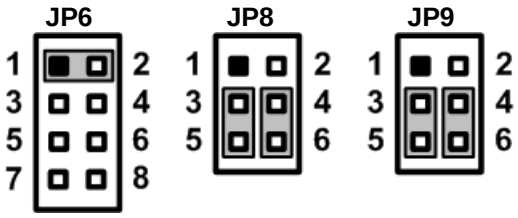
Function	Setting
Power: Set CN3A pin 1 to +12V	1-3 close
Power: Set CN3A pin 1 to +5V	5-7 close
Data: Set CN3A pin 1 to DCD (Default)	7-9 close
Power: Set CN3A pin 9 to +12V	2-4 close
Power: Set CN3A pin 9 to +5V	6-8 close
Data: Set CN3A pin 9 to RI (Default)	8-10 close



2.3.6 COM1 RS-232/422/485 Mode Setting (JP6, JP8, JP9)

Use these jumpers to set COM1 port to operate as RS-232, RS-422 or RS-485 communication mode. When these jumpers are set to operate as RS-422 or RS485 mode, please make sure COM1 is on data mode (see section 2.3.5)

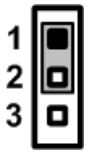
Function	Setting
RS-232 mode (Default)	JP6 1-2 close JP8 3-5, 4-6 close JP9 3-5, 4-6 close
RS-422 mode	JP6 3-4, 7-8 close JP8 1-3, 2-4 close JP9 1-3, 2-4 close
RS-485 mode	JP6 5-6, 7-8 close JP8 1-3, 2-4 close JP9 1-3, 2-4 close



2.3.7 Restore BIOS Optimal Defaults (JP10)

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 (Default)	1-2 close
Restore BIOS optimal defaults	2-3 close



2.4 Connectors

Signals go to other parts of the system through connectors. Loose or improper connection might cause problems, please make sure all connectors are properly and firmly connected. Here is a summary table which shows all connectors on the hardware.

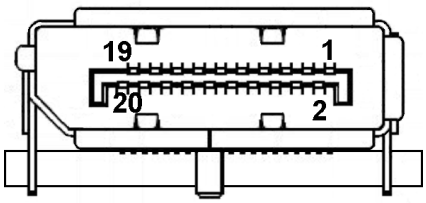
Connector	Description
CN1~2	DisplayPort 1 and 2 Connectors
CN3	COM1 Connector (CN3A) and DVI-I Connector (CN3B)
CN4	PS/2 Keyboard and Mouse Connector
CN5	HD Audio Jack
CN6	USB Port 2 and 3 Stack
CN7	USB Port 0 and 1 Stack
CN8	Ethernet Port 2 Internal LEDs Connector
CN9	Ethernet Port 1 (CN9A) and 2 (CN9B)
CN10	Internal Mouse Connector
CN11	Ethernet Port 1 Internal LEDs Connector
CN12	COM2 Connector
CN13	Internal Keyboard Connector
CN14~15	PCI-Express x1 Slots
CN16	PCI-Express x4 Slot
CN17	COM3 Connector
CN18	PCI-Express x16 Slot
CN19	COM4 Connector
CN20	Digital I/O Port Connector
CN21	USB Port 4 and 5 Connector
CN22	USB Port 8 and 9 Connector
CN23	USB Port 10 and 11 Connector
CN24	SMBus Connector
CN25	USB Port 6 and 7 Connector
CN26~28	Serial ATA 2.0 port 2, 3 and 4 Connectors
CN29	24-pin ATX Power Connector
CN30	Internal Power Connector
ATX2	8-pin +12V ATX Power Connector
CF1	CFast™ Socket
DIMM1~4	DDRIII DIMM Connectors
FAN1	CPU Fan Connector
FAN2	System Fan Connector
JP11	Front Panel Connector
PCI1~3	PCI 1, 2 and 3 Slots
SATA1~2	Serial ATA 3.0 port 0 and 1 Connectors

2.4.1 Display Port Connectors (CN1 and CN2)

Display Port is a digital display interface standard. This board has two Display Port interfaces which are available through connector CN1 and CN2.

Pin	Signal
1	LANE 0
2	GND
3	LANE 0#
4	LANE 1
5	GND
6	LANE 1#
7	LANE 2
8	GND
9	LANE 2#
10	LANE 3
11	GND
12	LANE 3#
13	GND
14	GND
15	AUX CH
16	GND
17	AUX CH#
18	Hot Plug Detect
19	NC
20	DP_PWR(3.3V)

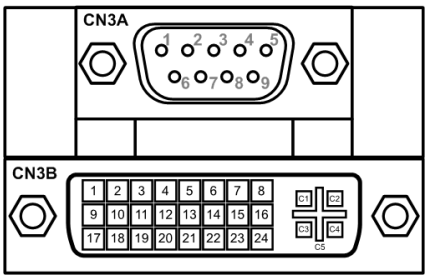
CN1 and CN2



2.4.2 COM1 and DVI-I Connector (CN3)

CN3 is a double-deck connector comprising an upper connector for COM1 port (CN3A) and a lower connector for DVI-I port (CN3B). The DVI-I (Digital Video Interface – Integrated) provides transmission of fast and high quality video signal between source device (graphic card) and display device (monitor). The DVI-I interface supports both digital and analog.

Pin	CN3A Signal
1	Data Carrier Detect (DCD)
2	Receive Data (RXD)
3	Transmit Data (TXD)
4	Data Terminal Ready (DTR)
5	Ground (GND)
6	Data Set Ready (DSR)
7	Request to Send (RTS)
8	Clear to Send (CTS)
9	Ring Indicator (RI)

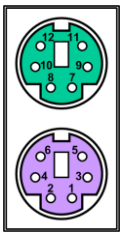


Pin	CN3B Signal	Pin	CN3B Signal
1	TX2-	2	TX2+
3	Ground	4	CRT_SPD_CLK
5	CRT_SPD DATA	6	DVI_SPD_CLK
7	DVI_SPD DATA	8	CRT-VSYNC
9	TX1-	10	TX1+
11	Ground	12	NC
13	NC	14	VGAVCC
15	Ground	16	FPDETECT
17	TX0-	18	TX0+
19	Ground	20	NC
21	NC	22	Ground
23	TXC+	24	TXC-
C1	CRT-RED	C2	CRT-GREEN
C3	CRT-BLUE	C4	CRT-HSYNC
C5	VGAGND		

2.4.3 PS/2 Keyboard and Mouse Connector (CN4)

The board has two 6-pin mini-DIN PS/2 connectors; green for mouse and purple for keyboard.

Pin	Signal	Pin	Signal
1	K/B Data	7	M/S Data
2	NC	8	NC
3	GND	9	GND
4	+5V	10	+5V
5	K/B CLK	11	M/S CLK
6	NC	12	NC



2.4.4 HD Audio Jack (CN5)

Install audio driver, and then attach audio devices to CN5.

Pin Color	Signal
Blue	Line-in
Green	Line-out
Pink	MIC-in

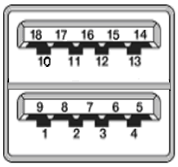
2.4.5 USB Port Stacks (CN6 and CN7)

These Universal Serial Bus 3.0 connectors on the rear I/O are only for installing versatile USB 2.0 compliant peripherals such as keyboard, mouse or scanner…etc.
Please be advised that USB 3.0 devices are not supported, plugging might cause malfunction.

The CN6 carries USB port 2 and 3 signals while CN7 USB port 0 and 1 signals.

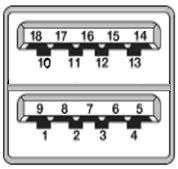
Pin	Signal	Pin	Signal
1	USB_VCC (+5V level standby power)	10	USB_VCC (+5V level standby power)
2	USB_Data0-	11	USB_Data1-
3	USB_Data0+	12	USB_Data1+
4	GND	13	GND
5	NC	14	NC
6	NC	15	NC
7	GND	16	GND
8	NC	17	NC
9	NC	18	NC

CN7



Pin	Signal	Pin	Signal
1	USB_VCC (+5V level standby power)	10	USB_VCC (+5V level standby power)
2	USB_Data2-	11	USB_Data3-
3	USB_Data2+	12	USB_Data3+
4	GND	13	GND
5	NC	14	NC
6	NC	15	NC
7	GND	16	GND
8	NC	17	NC
9	NC	18	NC

CN6

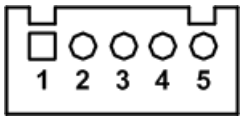


2.4.6 Ethernet Port Internal LEDs Connectors (CN8 and CN11)

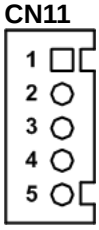
The CN11 and CN8 are ethernet port 1 and 2 internal LEDs connectors, respectively.

Pin	Signal
1	Activity link LED(+)
2	Activity link LED(-)
3	100Mbps speed LED, low active
4	+3.3V level standby power
5	1GMbps speed LED, low active

CN8



CN11

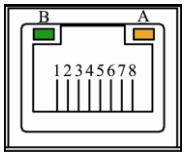


2.4.7 Ethernet Ports (CN9)

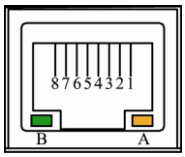
The board is equipped with two high performance plug and play ethernet interfaces which are fully compliant with the IEEE 802.3 standard. The ethernet port uses RJ-45 connector. Connection can be established by plugging one end of the ethernet cable into this RJ-45 connector and the other end to a 1000/100/10-Base-T hub.

The upper connector is ethernet port 1 (CN9B) while the lower connector is ethernet port 2 (CN9A).

Pin	Signal	Pin	Signal
1	MDI0+	5	MDI2+
2	MDI0-	6	MDI2-
3	MDI1+	7	MDI3+
4	MDI1-	8	MDI3-
A	Active LED		
B	100 LAN LED (Green)/ 1000 LAN LED (Orange)		



CN9B

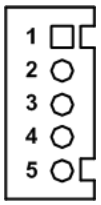


CN9A

2.4.8 Internal Mouse Connector (CN10)

The internal mouse interface is available through a 5-pin connector.

Pin	Signal
1	Mouse Clock
2	Mouse Data
3	NC
4	GND
5	+5V level

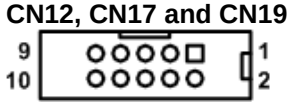


2.4.9 COM Connectors (CN12, CN17 and CN19)

Each connector is a 2x5 pin 2.0 pitch box header. These connectors are equipped with power capability on DCD and RI pins by setting jumpers (see section 2.3.2, 2.3.3 and 2.3.4). The COM2, COM3 and COM4 interfaces are available through CN12, CN17 and CN19, respectively.

Pin	Signal
1	Data Carrier Detect (DCD)
2	Data Set Ready (DSR)
3	Receive Data (RXD)
4	Request to Send (RTS)
5	Transmit Data (TXD)
6	Clear to Send (CTS)
7	Data Terminal Ready (DTR)
8	Ring Indicator (RI)
9	Ground (GND)
10	NC

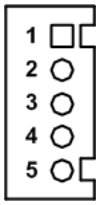
CN12, CN17 and CN19



2.4.10 Internal Keyboard Connector (CN13)

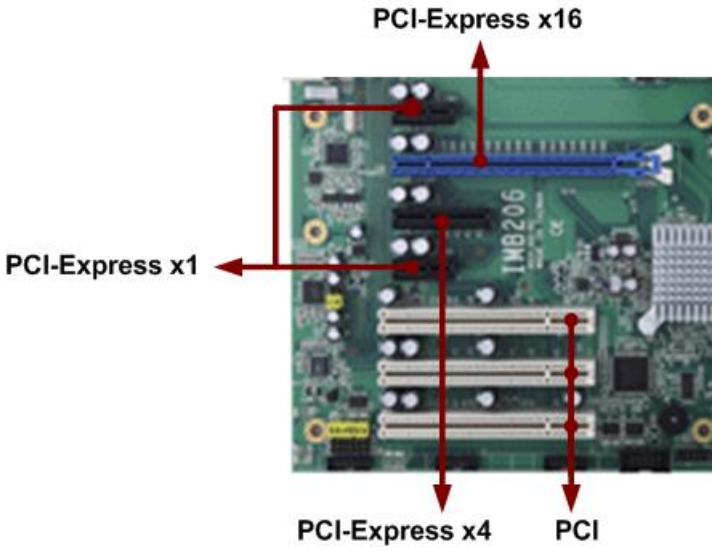
The internal keyboard interface is available through a 5-pin connector.

Pin	Signal
1	Keyboard Clock
2	Keyboard Data
3	NC
4	GND
5	+5V level



2.4.11 PCI and PCI-Express Slots (PCI1~3, CN14~16 and CN18)

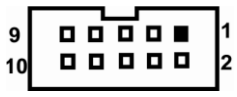
The PCI and PCI-Express slots support cards such as LAN card, SCSI card, USB card and other cards that comply with PCI specifications. Refer to figure below for the location of the slots.



2.4.12 Digital I/O Port Connector (CN20)

The board is equipped with an 8-channel 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	DIO 6	2	DIO 1
3	DIO 7	4	DIO 2
5	DIO 8	6	DIO 3
7	GND	8	DIO 4
9	GND	10	DIO 5

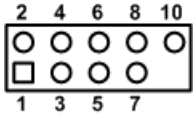


2.4.13 USB Connectors (CN21, CN22, CN23 and CN25)

The CN21, CN22, CN23 and CN25 are USB connectors carrying USB port 4 and 5, USB port 8 and 9, USB port 10 and 11 and USB port 6 and 7, respectively. They are for installing versatile USB interface peripherals. These connectors are designed with +5V level standby power which can provide power when system is in suspend mode.

Pin	Signal	Pin	Signal
1	USB VCC (+5V level standby power)	2	USB VCC (+5V level standby power)
3	USB DX-	4	USB DY-
5	USB DX+	6	USB DY+
7	GND	8	GND
		10	GND

CN21,CN22,CN23,CN25



2.4.14 SMBus Connector (CN24)

This connector is for SMBus interface. The SMBus (System Management Bus) is a simple bus for the purpose of lightweight communication. Most commonly it is used for communication with the power source related applications such as on/off instructions.

Pin	Signal
1	SMB_CLOCK
2	NC
3	GND
4	SMB_DATA
5	+5V

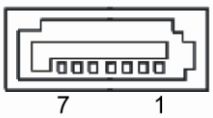
2.4.15 Serial ATA Connectors (CN26, CN27, CN28, SATA1 and SATA2)

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.

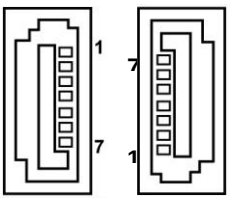
This board has three SATA 2.0 ports (3Gb/s performance) and two SATA 3.0 ports (6Gb/s performance).

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

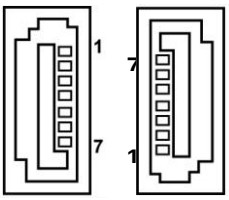
CN27



CN28 **CN26**



SATA2 **SATA1**



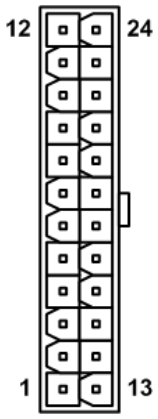
2.4.16 ATX Power Connectors (CN29 and ATX2)

Steady and sufficient power can be supplied to all components on the board by connecting power connector. Please make sure all components and devices are properly installed before connecting the power connector.

External power supply plug fits into this connector in only one orientation. Properly press down power supply plug until it completely and firmly fits into this connector. Loose connection may cause system instability.

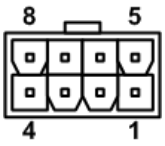
The CN29 is a 24-pin ATX power connector. Its pin assignments are given in table below.

Pin	Signal	Pin	Signal
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	PWR OK	20	-5V
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	3.3V	24	GND



The ATX2 is an 8-pin +12V ATX power connector for connecting CPU core voltage.

Pin	Signal	Pin	Signal
1	GND	5	+12V
2	GND	6	+12V
3	GND	7	+12V
4	GND	8	+12V



2.4.17 Internal Power Connector (CN30)

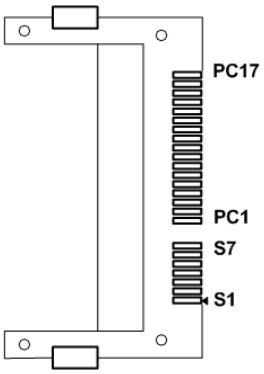
The internal power interface is available through this connector.

Pin	Signal
1	GND
2	GND
3	5VSB
4	3.3V
5	-5V
6	+5V
7	-12V
8	+12V

2.4.18 CFast™ Socket (CF1)

The board is equipped with a CFast™ socket side to support a CFast™ card which is based on the Serial ATA bus. The socket is specially designed to avoid incorrect installation of the CFast™ card. When installing or removing the CFast™ card, please make sure the system power is off. The CFast™ card by default identifies itself as C: or D: drive in your PC system.

Pin	Signal	Pin	Signal
S1	GND	PC1	NC
S2	TX+	PC2	GND
S3	TX-	PC3	NC
S4	GND	PC4	NC
S5	RX+	PC5	NC
S6	RX-	PC6	NC
S7	GND	PC7	GND
		PC8	NC
		PC9	NC
		PC10	NC
		PC11	NC
		PC12	NC
		PC13	3.3V
		PC14	3.3V
		PC15	GND
		PC16	GND
		PC17	NC

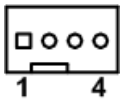


2.4.19 Fan Connectors (FAN1 and FAN2)

Fans are always needed for cooling down CPU and system temperature. The board has two fan connectors. You can find fan speed on BIOS Setup Utility if CPU fan is installed. For further information, see BIOS Setup Utility: Advanced\HW Monitor\PC Health Status (refer to section 5.4).

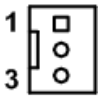
The FAN1 is a CPU fan interface, see table below.

Pin	Signal
1	GND
2	+12V level
3	Rotation detection
4	Speed control



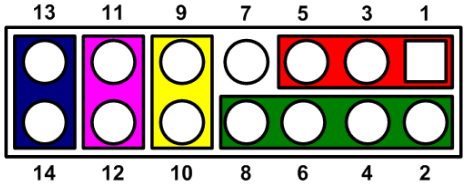
The FAN2 is a system fan interface, see table below.

Pin	Signal
1	GND
2	+12V level
3	Sensor



2.4.20 Front Panel Connector (JP11)

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
Pin 1 connects anode(+) of LED and pin 5 connects cathode(-) of LED. The power LED lights up when the system is powered on. The pin 3 is defined as GND.

External Speaker and Internal Buzzer
Pin 2, 4, 6 and 8 connect the case-mounted speaker unit or internal buzzer. While connecting the CPU board to an internal buzzer, please set pin 2 and 4 closed; while connecting to an external speaker, you need to set pins 2 and 4 opened and connect the speaker cable to pin 8(+) and pin 2(-).

Power On/Off Button
Pin 9 and 10 connect the power button on front panel to the CPU board, which allows users to turn on or off power supply.

System Reset Switch
Pin 11 and 12 connect the case-mounted reset switch that reboots your computer without turning off the power switch. It is a better way to reboot your system for a longer life of system 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 is assigned as cathode(-) and pin 14 is assigned as anode(+).

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Chapter 3
Hardware Installation

Before installing the processor, please access Intel® website for more detail information of Processor Integration Video (LGA1155)**:**

http://www.intel.com/support/tw/processors/sb/CS-030860.htm .

3.1 Installing the Processor

The LGA1155 processor socket comes with a cover to protect the processor. Please install the processor into the CPU socket step by step as below:

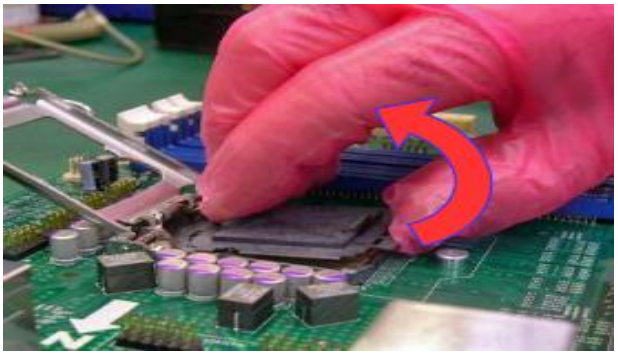
Step1 Opening the socket:

- Disengage load lever by releasing down and out on the hook. This will clear retention tab.
- Rotate load lever to open position at approximately 135°.
- Rotate load plate to open position at approximately 150°.

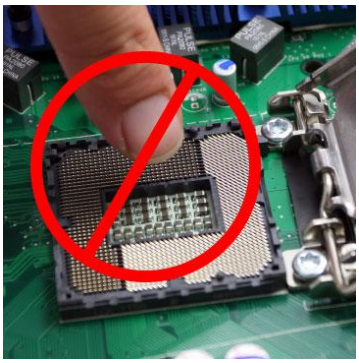
Note: ***Apply pressure to corner with right-hand thumb when opening or closing load lever - otherwise lever will bounce back (as a mouse trap) causing bent contacts.***

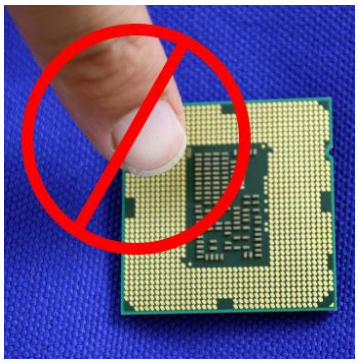
Step2 Removing the socket protective cover:

- Place thumb against the front edge of the protective cover and rest index finger on the rear grip to maintain control of the cover.
- Lift the front edge of the protective cover to disengage from the socket. Keep control of the cover by holding the rear grip with index finger.
- Lift protective cover away from the socket, being careful not to touch the electrical contacts.



Note: ***Vertical removal is NOT recommended, as it requires higher force and can lead to socket contact damage.***

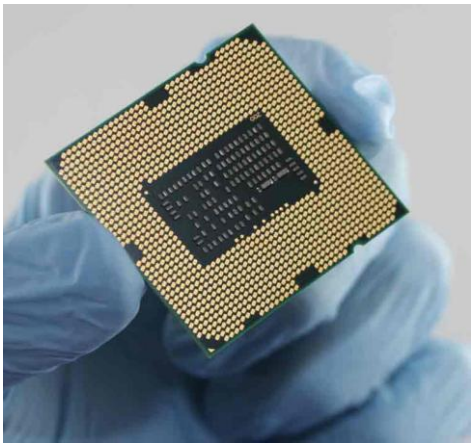




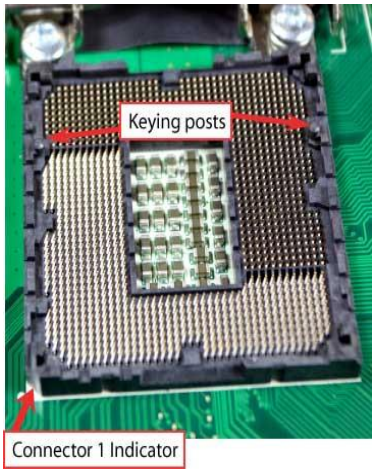
Caution: ***Never touch fragile socket contacts to avoid damage and do not touch processor sensitive contacts at any time during installation.***

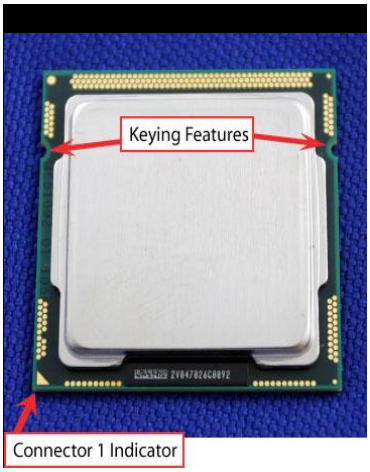
Step3 Processor installation:

- Lift processor package from shipping media by grasping the substrate edges.



- Scan the processor package gold pads for any presence of foreign material. If necessary, the gold pads can be wiped clean with a soft lint-free cloth and isopropyl alcohol.
- Locate connection 1 indicator on the processor which aligns with connection 1 indicator chamfer on the socket, and notice processor keying features that line up with posts along socket walls.

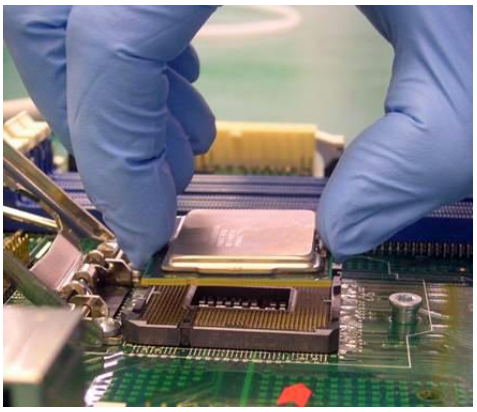




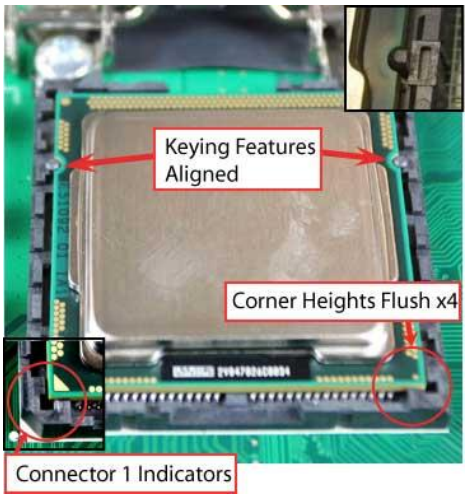
- Grasp the processor with thumb and index finger along the top and bottom edges. (Do not touch the orientation notches.) The socket will have cutouts for your fingers to fit into (see image below).
- Carefully place the processor into the socket body vertically (see image below).

Note: ***Tilting or roughly shifting it into place can damage socket contacts.***

Caution: ***Do not use a vacuum pen for installation.***

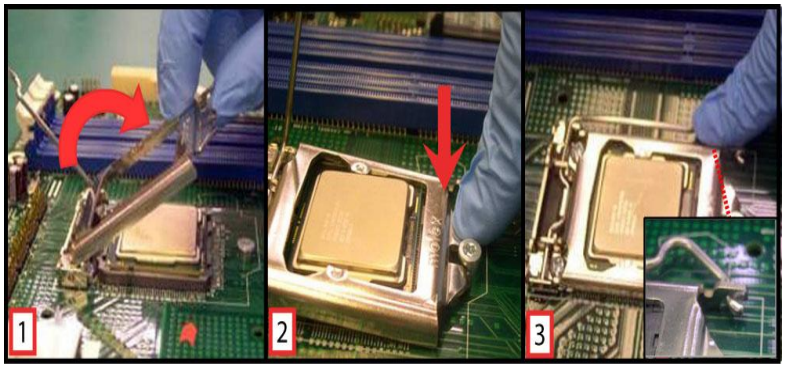


- Verify that package is within the socket body and properly connected to orientation keys.



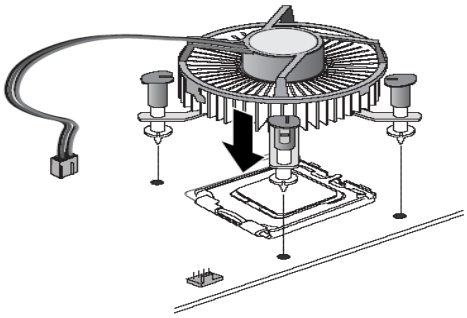
- Close the socket (see image below):

1. Gently lower the load plate.
2. Make sure load plate's front edge slides under the shoulder screw cap as the lever is lowered.
3. Latch the lever under the top plate's corner tab, being cautious not to damage the motherboard with the tip of the lever.

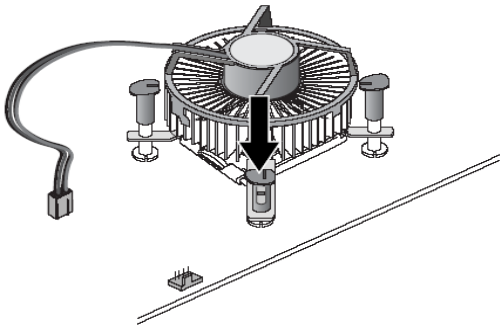


Step4 Fan heatsink handling:

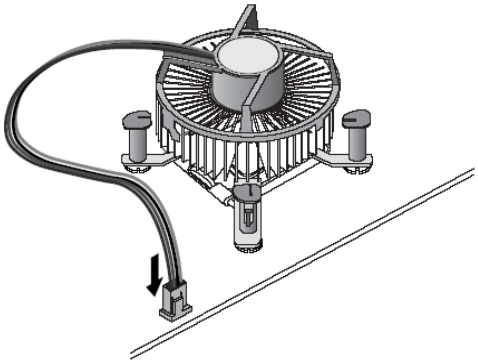
1. Orientate the CPU cooling fan to fixing holes on the board.



2. Screw the CPU cooling fan onto the board.



3. Make sure the CPU fan is plugged to the CPU fan connector.

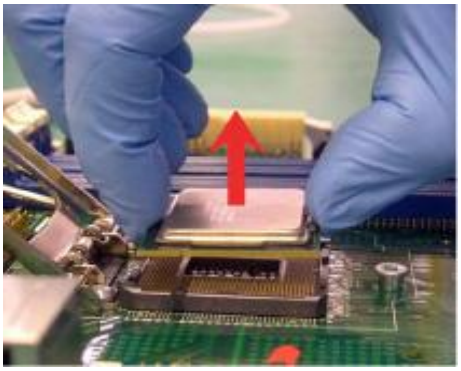


Step5 Removing the processor:

- Open the socket:

  1. Disengage the load lever.
  2. Open the load plate

- Remove the Processor package, holding along the top and bottom edges, or by using a vacuum pen.
- Maintain Processor horizontal and remove Processor with a vertical motion to avoid damaging the socket contacts.

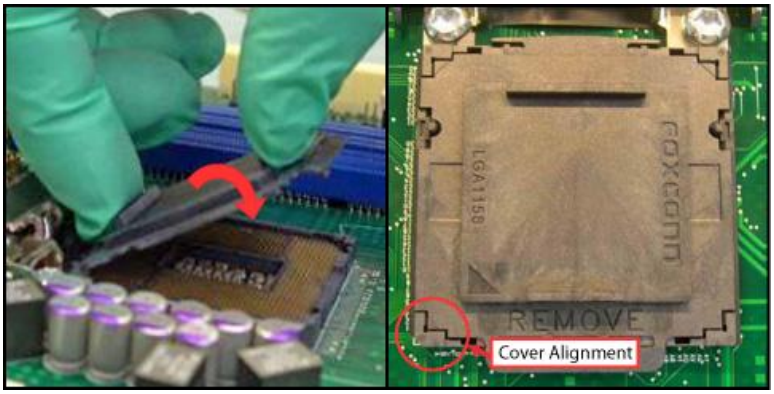


- Place the processor in a specially designed tray or ESD retainer for storage. Do not place directly on table resting on gold lands
- Assemble LGA1155 socket protective cover:

1. Hold protective cover at 45 degree angle to the LGA1155 Socket.
2. Carefully lower protective cover on hinge side first, to contact with the outside wall of the LGA1155 Socket:
3. Engage protective cover retention features to outside of LGA1155 Socket, AND align 2 cover corners to socket corners (This step is critical to avoid Bent Contact Damage!).
4. Lower protective cover to attach to the LGA1155 Socket on Shoulder screw side.

- Perform Visual and Tactile verification that protective cover is properly seated in the LGA1155 Socket:

  Hold cover and move gently “side by side” to feel the play within the cover and the LGA1155 Socket.



- Close the socket load plate and engage the load lever (see image below).

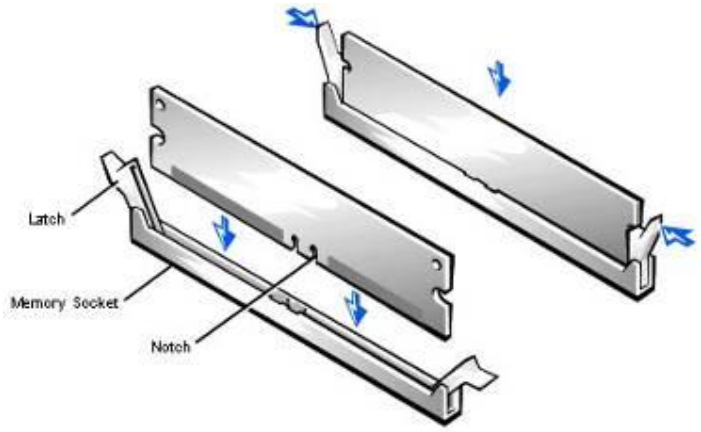
3.2 Installing the Memory

The board supports four 240-pin DDR3 DIMM memory sockets with maximum memory capacity up to 16GB.

Note: ***A DDR3 module has the same physical dimensions as a DDR2 DIMM but is notched differently to prevent installation on a DDR2 DIMM socket.***

Please follow steps below to install the memory modules:

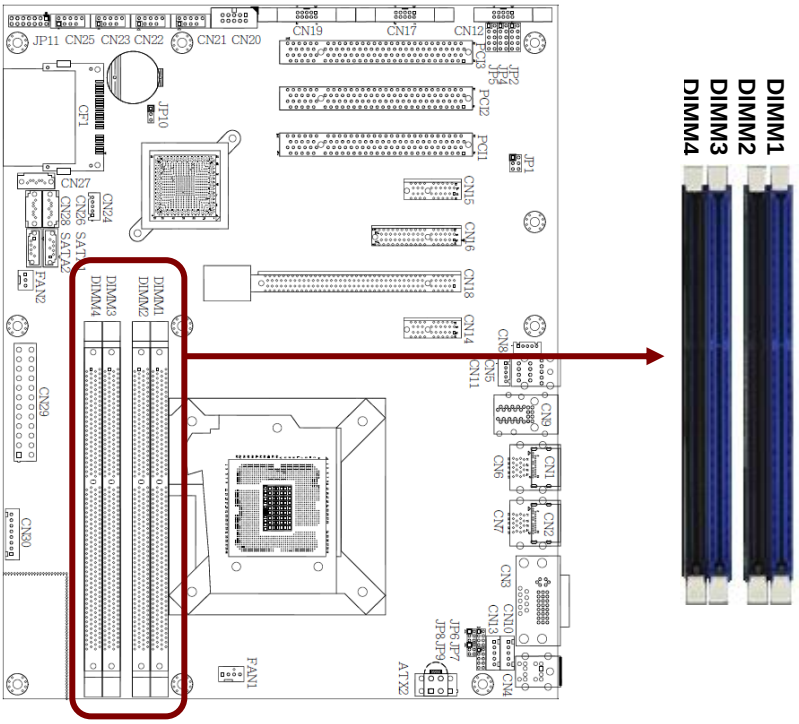
- Push down latches on each side of the DIMM socket.
- Align the memory module with the socket that notches of memory module must match the socket keys for a correct installation.
- Install the memory module into the socket and push it firmly down until it is fully seated. The socket latches are levered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



3.2.1 Dual Channel Memory Configuration

This motherboard provides four DDR3 memory sockets and support Dual Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory enabling Dual Channel memory sockets are divided into two channels and each channel has two memory sockets as follows:

- Channel 0: DIMM1, DIMM2
- Channel 1: DIMM3, DIMM4



Due to CPU limitations, read the following guidelines before installing the memory in Dual Channel mode.

1. Dual Channel mode cannot be enabled if only one DDR3 memory module is installed.
2. When enabling Dual Channel mode with two or four memory modules, it is recommended that memory of the same capacity, brand, speed, and chips are used for optimum performance. When enabling Dual Channel mode with two memory modules, be sure to install them in DIMM2 and DIMM4 sockets.

Chapter 4
Hardware Description

4.1 Microprocessors

The IMB206 Series supports Intel® Core™ i7 / Core™ i5 / Core™ i3 / Pentium® / Celeron® processors, which enable your system to operate under Windows® XP, Windows® 7 and Linux environments. The system performance depends on the microprocessor. Make sure all correct settings are arranged for your installed microprocessor to prevent the CPU from damages.

4.2 BIOS

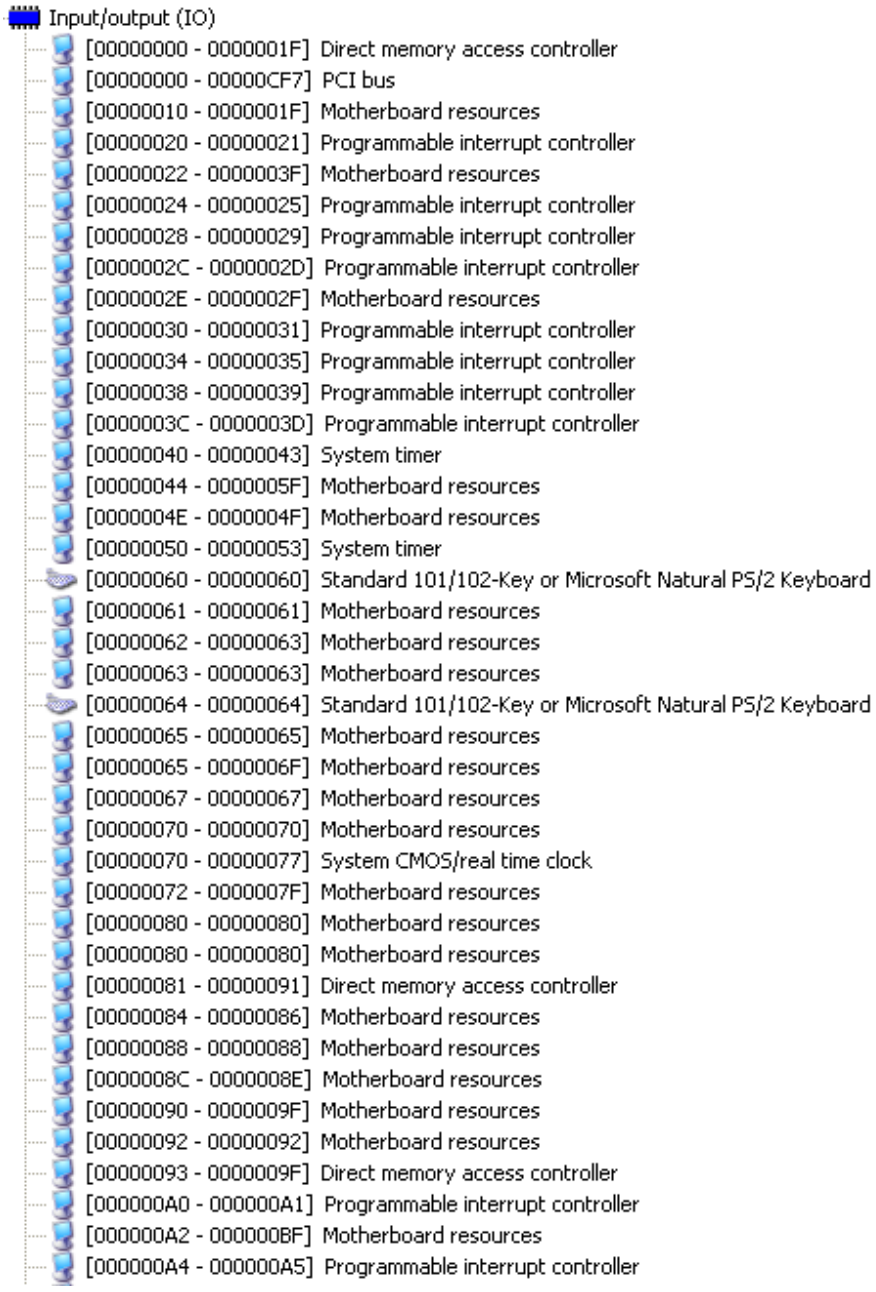
The IMB206 Series uses AMI Plug and Play BIOS with a single 64Mbit SPI Flash.

4.3 System Memory

The IMB206 Series supports four 240-pin DDR3 DIMM sockets for a maximum memory of 16GB DDR3 SDRAMs. The memory module comes in sizes of 1GB, 2GB and 4GB.

4.4 I/O Port Address Map

The Intel® Core™ i7 / Core™ i5 / Core™ i3 / Pentium® / Celeron® processors communicate via I/O ports. Total 1KB port addresses are available for assigning to other devices via I/O expansion cards.



[000000A8 - 000000A9] Programmable interrupt controller
[000000AC - 000000AD] Programmable interrupt controller
[000000B0 - 000000B1] Programmable interrupt controller
[000000B2 - 000000B3] Motherboard resources
[000000B4 - 000000B5] Programmable interrupt controller
[000000B8 - 000000B9] Programmable interrupt controller
[000000BC - 000000BD] Programmable interrupt controller
[000000C0 - 000000DF] Direct memory access controller
[000000E0 - 000000EF] Motherboard resources
[000000F0 - 000000FF] Numeric data processor
[00000274 - 00000277] ISAPNP Read Data Port
[00000279 - 00000279] ISAPNP Read Data Port
[000002E0 - 000002E7] Communications Port (COM3)
[000002E8 - 000002EF] Communications Port (COM4)
[000002F8 - 000002FF] Communications Port (COM2)
[000003B0 - 000003BB] Intel(R) HD Graphics Family
[000003C0 - 000003DF] Intel(R) HD Graphics Family
[000003F8 - 000003FF] Communications Port (COM1)
[00000400 - 00000453] Motherboard resources
[00000454 - 00000457] Motherboard resources
[00000458 - 0000047F] Motherboard resources
[000004D0 - 000004D1] Motherboard resources
[000004D0 - 000004D1] Programmable interrupt controller
[00000500 - 0000057F] Motherboard resources
[00000680 - 0000069F] Motherboard resources
[00000A10 - 00000A17] Motherboard resources
[00000A79 - 00000A79] ISAPNP Read Data Port
[00000D00 - 0000FFFF] PCI bus
[00001000 - 0000100F] Motherboard resources
[0000164E - 0000164F] Motherboard resources
[0000E000 - 0000E01F] Intel(R) 82583V Gigabit Network Connection
[0000E000 - 0000EFFF] Intel(R) 6 Series/C200 Series Chipset Family PCI Express Root Port 7 - 1C1C
[0000F000 - 0000F03F] Intel(R) HD Graphics Family
[0000F040 - 0000F05F] Intel(R) 6 Series/C200 Series Chipset Family SMBus Controller - 1C22
[0000F060 - 0000F07F] Intel(R) 82579LM Gigabit Network Connection
[0000F080 - 0000F08F] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[0000F090 - 0000F09F] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[0000F0A0 - 0000F0A3] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[0000F0B0 - 0000F0B7] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[0000F0C0 - 0000F0C3] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[0000F0D0 - 0000F0D7] Intel(R) 6 Series/C200 Series Chipset Family 2 port Serial ATA Storage Controller - 1C08
[0000F0E0 - 0000F0EF] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[0000F0F0 - 0000F0FF] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[0000F100 - 0000F103] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[0000F110 - 0000F117] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[0000F120 - 0000F123] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[0000F130 - 0000F137] Intel(R) 6 Series/C200 Series Chipset Family 4 port Serial ATA Storage Controller - 1C00
[0000F140 - 0000F147] Intel(R) Active Management Technology - SOL (COM5)
[0000FFFF - 0000FFFF] Motherboard resources
[0000FFFF - 0000FFFF] Motherboard resources

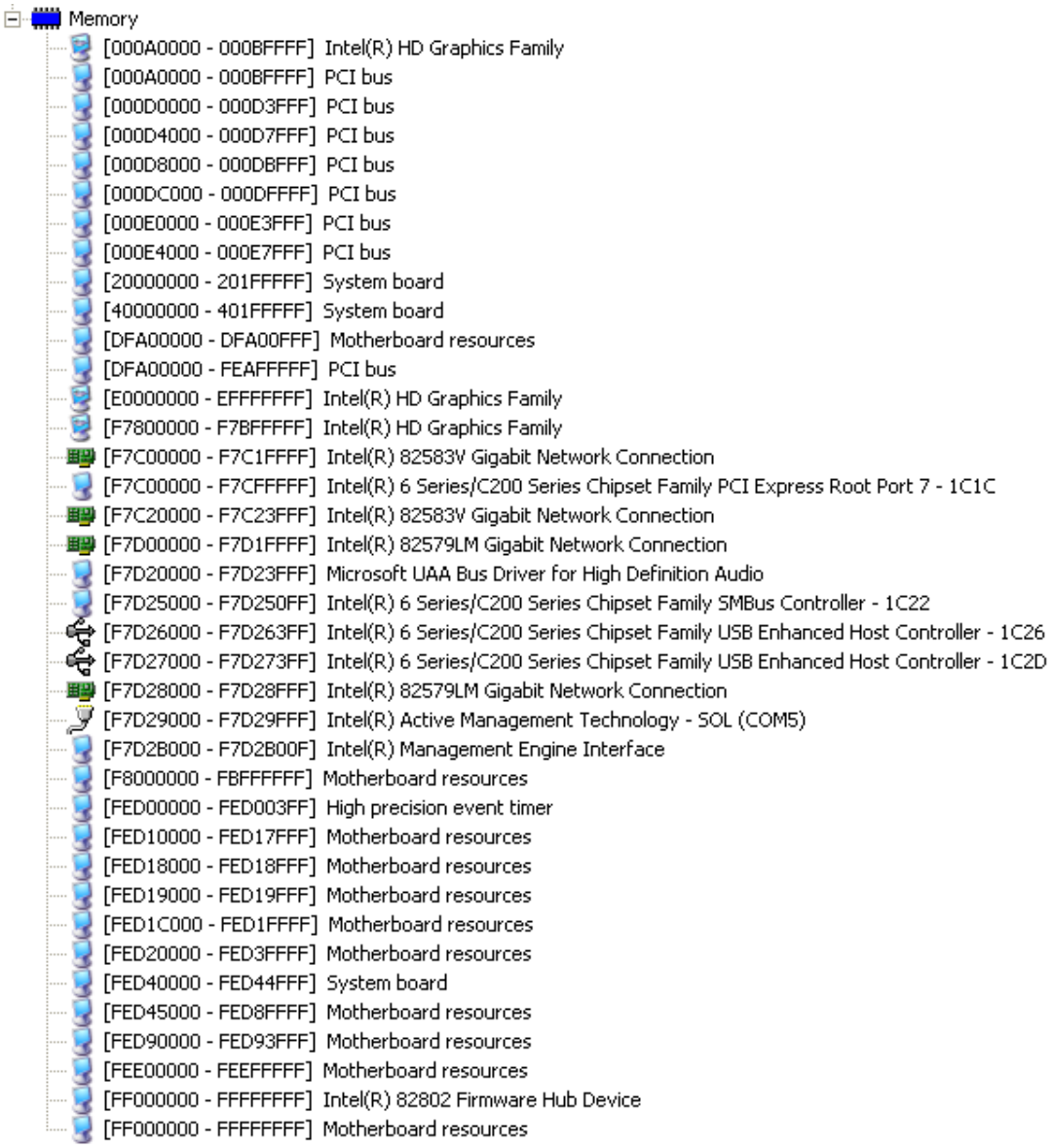
4.5 Interrupt Controller (IRQ) Map

The IMB206 Series is a 100% PC compatible control board which consists of 16 interrupt request lines. Four out of 16 can be programmable. The mapping list of the 16 interrupt request lines is shown as the following table.

IRQ	Parity check error
IRQ0	System timer output
IRQ1	Keyboard
IRQ2	Interrupt rerouting from IRQ8 through IRQ15
IRQ3	Serial port 2
IRQ4	Serial port 1
IRQ5	Serial port 3
IRQ7	Serial port 4
IRQ8	Realtime clock
IRQ9	ACPI controller
IRQ10	PCI device share
IRQ11	PCI device share
IRQ12	PS/2 mouse
IRQ13	Math coprocessor
IRQ14	SATA primary (legacy mode)
IRQ15	SATA secondary (legacy mode)

4.6 Memory Map

The memory mapping list is shown as follows:



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Chapter 5
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.

5.1 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 <Del> 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.

Note: ***If your computer can not boot after making and saving system changes with Setup, you can restore BIOS optimal defaults by setting JP10 (see section 2.3.7) .***

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.

5.2 Navigation Keys

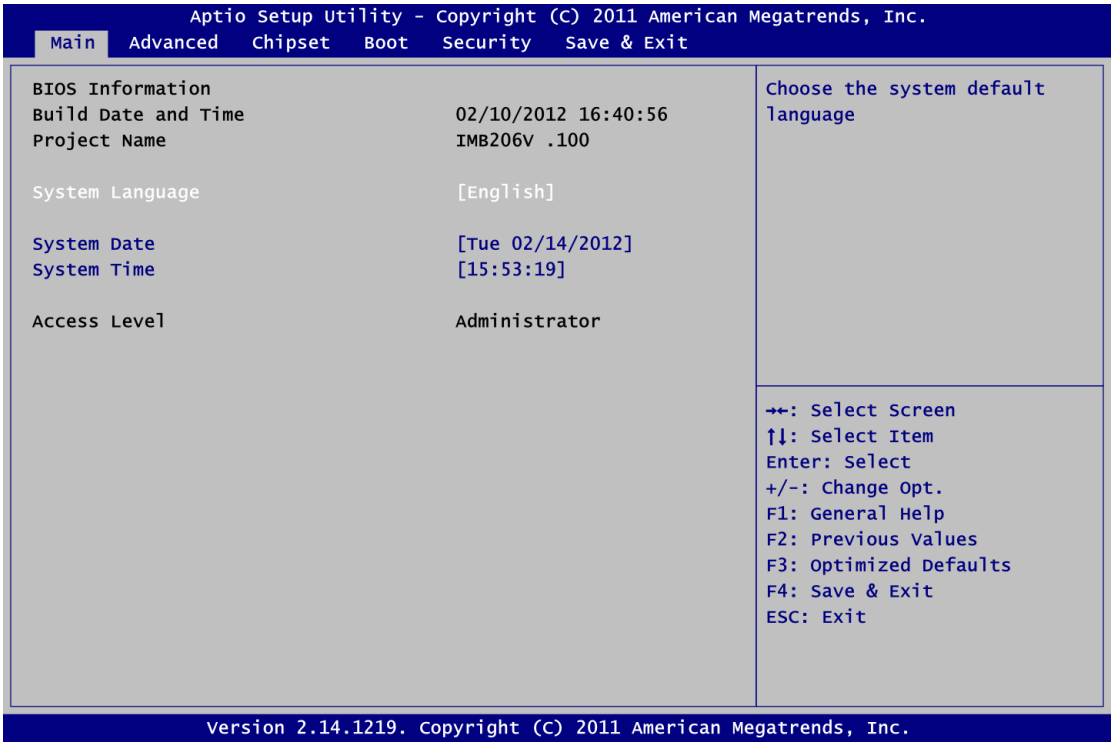
The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process. These keys include <F1>, <F2>, <Enter>, <ESC>, <Arrow> keys, and so on.

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.

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



System Language
Use this item to choose the system default language.

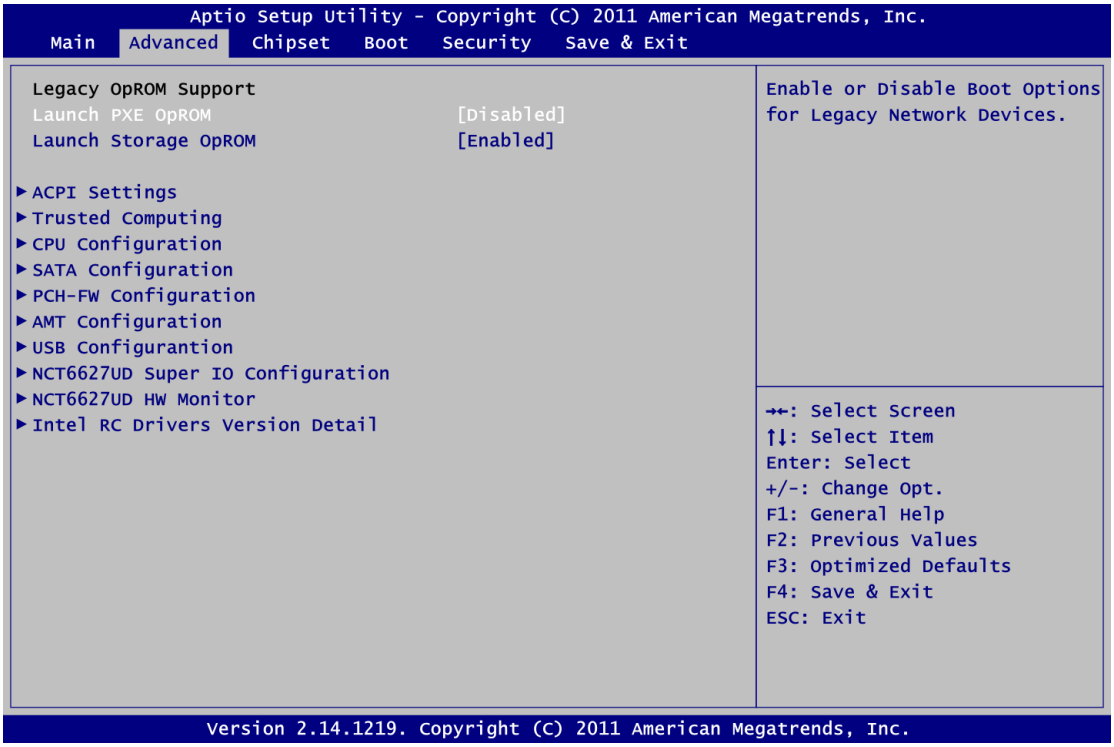
System Date/Time
Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in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

5.4 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
- ▶ Trusted Computing
- ▶ CPU Configuration
- ▶ SATA Configuration
- ▶ PCH-FW Configuration
- ▶ AMT Configuration
- ▶ USB Configuration
- ▶ NCT6627UD Super IO Configuration
- ▶ NCT6627UD HW Monitor
- ▶ Intel RC Drivers Version Detail

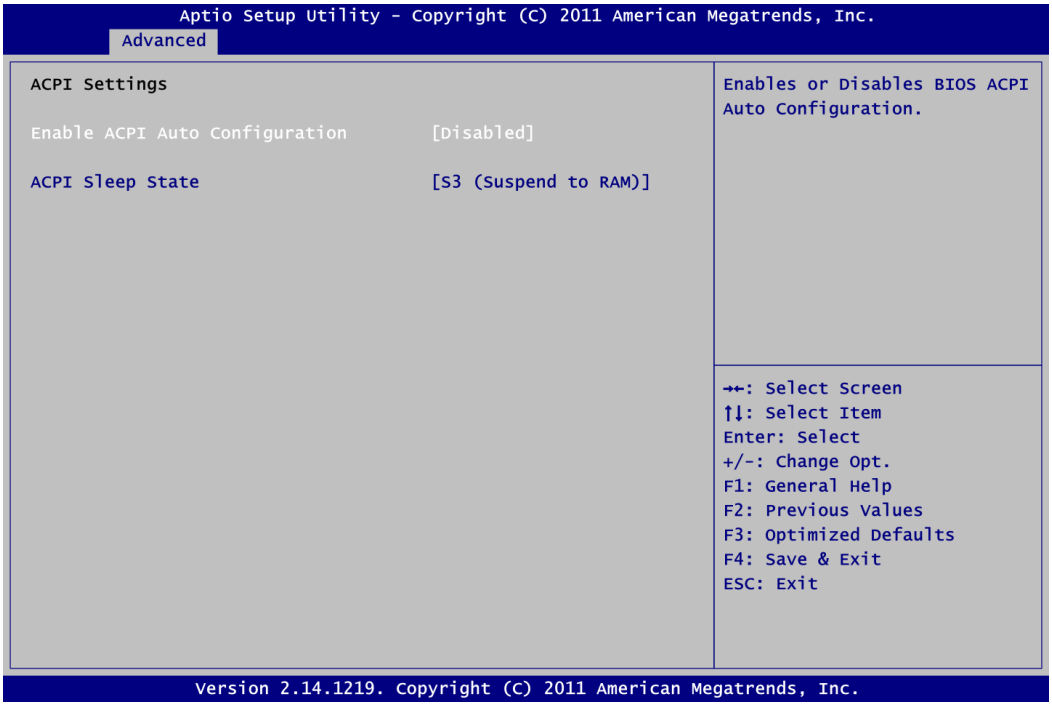
For items marked with "▶", please press <Enter> for more options.



Launch PXE OpROM
Use this item to enable or disable the boot ROM function of the onboard LAN chip when the system boots up.

Launch Storage OpROM
Enable or disable boot option for legacy mass storage devices with Option ROM.

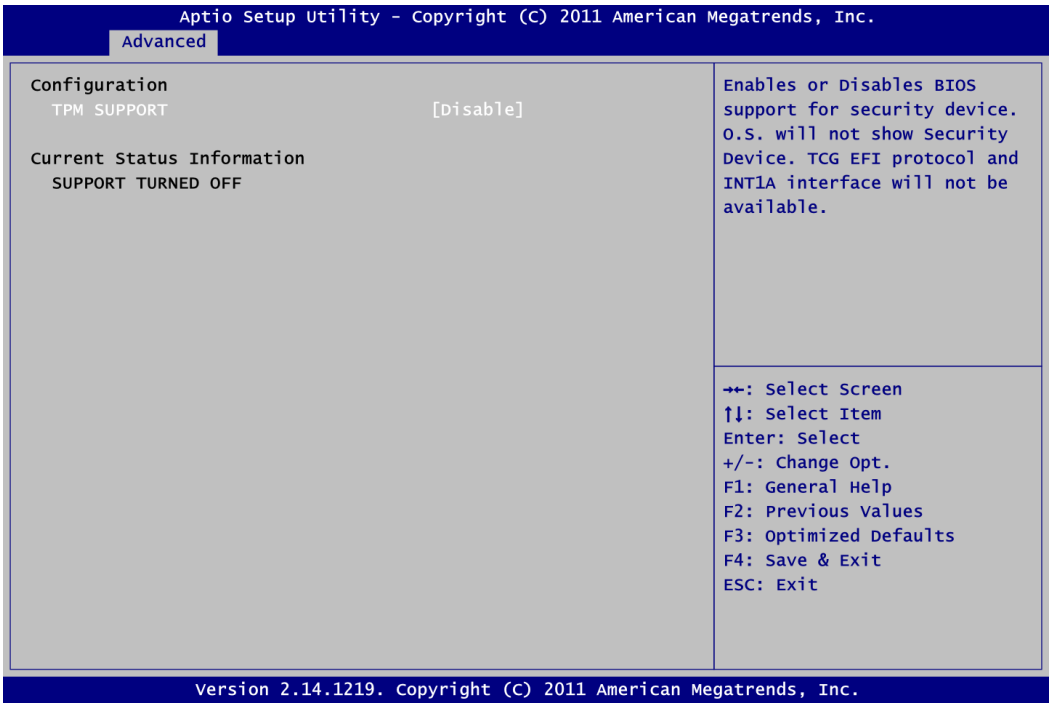
- **ACPI Settings**
  You can use this screen to select options for the ACPI configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



Enable ACPI Auto Configuration
Use this item to enable or disable BIOS ACPI auto configuration.

ACPI Sleep State
Select the highest ACPI sleep state the system will enter when the suspend button is pressed. Configuration options are Suspend Disabled, S1 (CPU Stop Clock) and S3 (Suspend to RAM).

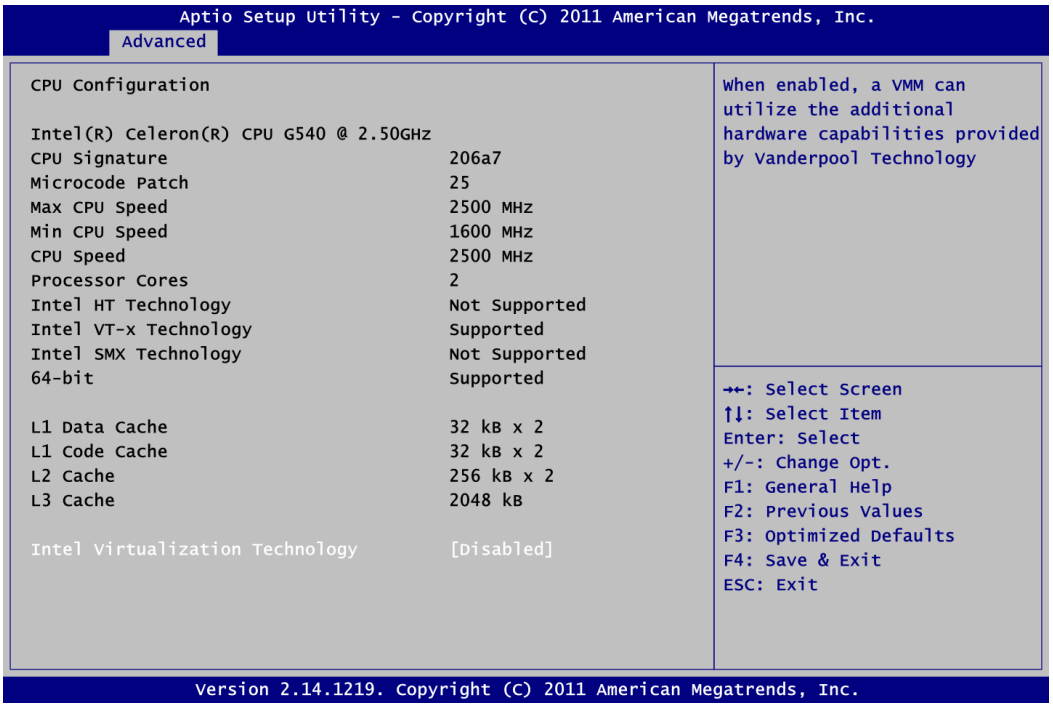
- **Trusted Computing**
  This screen provides function for specifying the TPM settings.



TPM Support
Use this item to control the Trusted Platform Module (TPM) functionality.

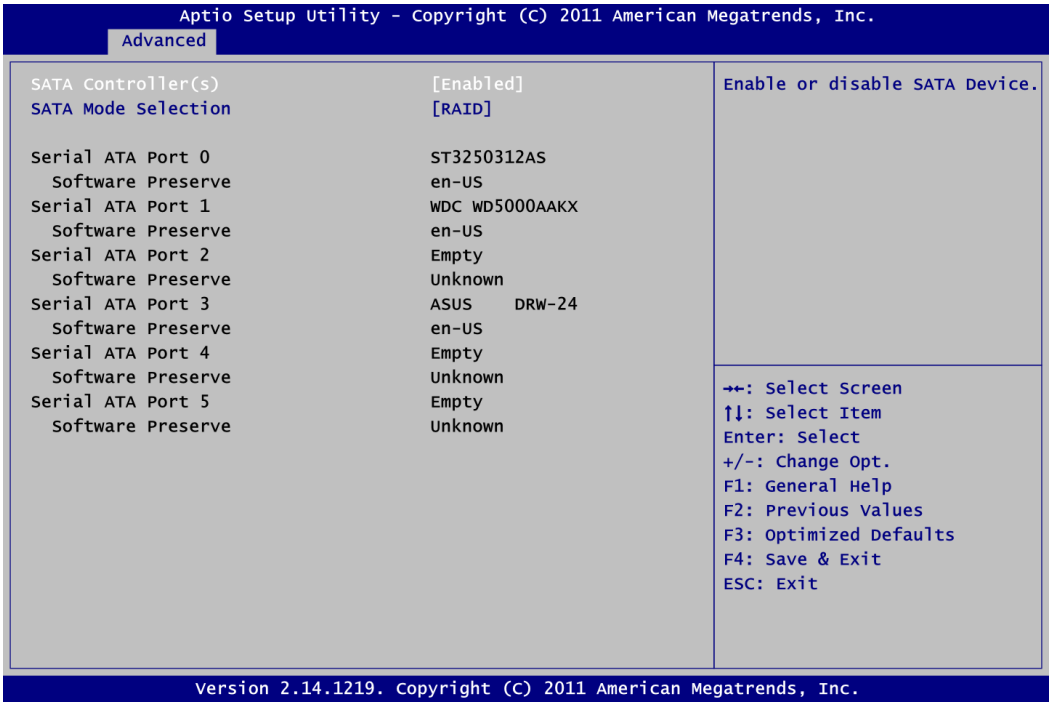
Current Status Information
Display current TPM status information.

- **CPU Configuration**
  This screen shows the CPU information.



Intel Virtualization Technology
This item allows a hardware platform to run multiple operating systems separately and simultaneously, enabling one system to virtually function as several systems.

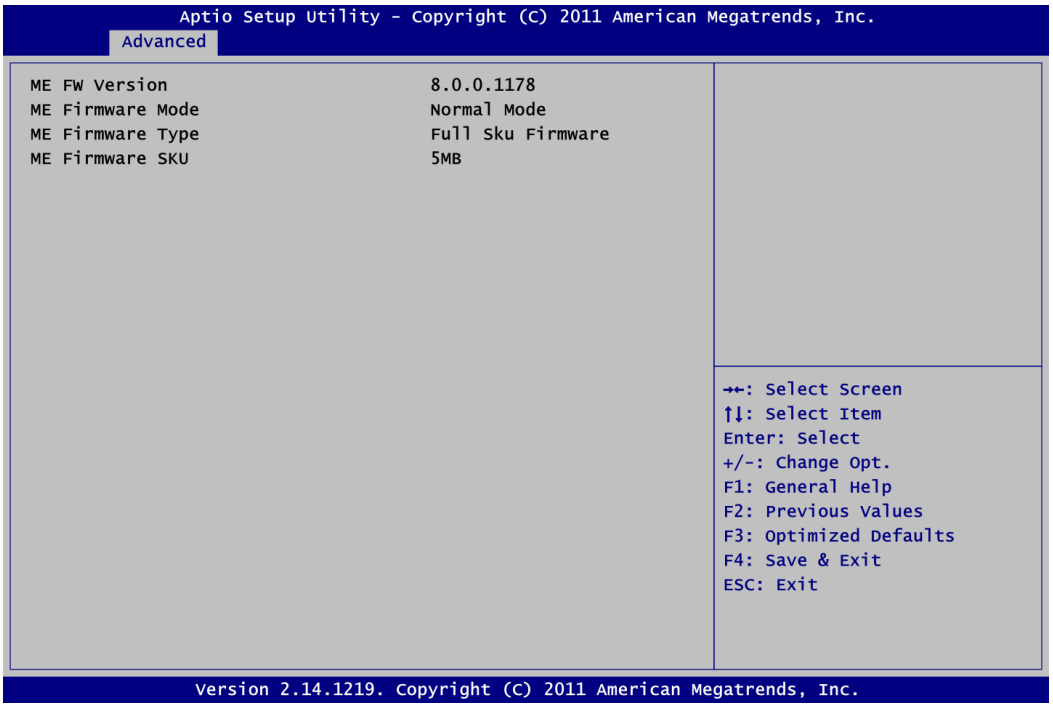
- **SATA Configuration**
  In this Configuration menu, you can see the currently installed hardware in the SATA ports. During system boot up, the BIOS automatically detects the presence of SATA devices.



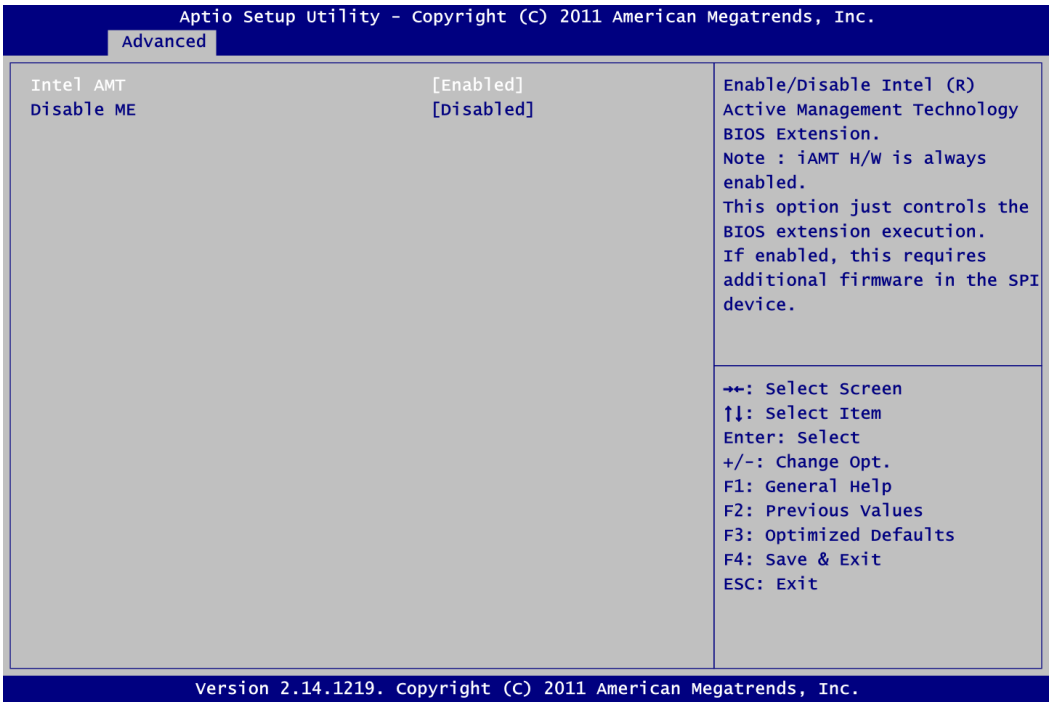
SATA Controller(s)
Use this item to enable or disable SATA device.

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

- **PCH-FW Configuration**
  This screen displays ME Firmware information.



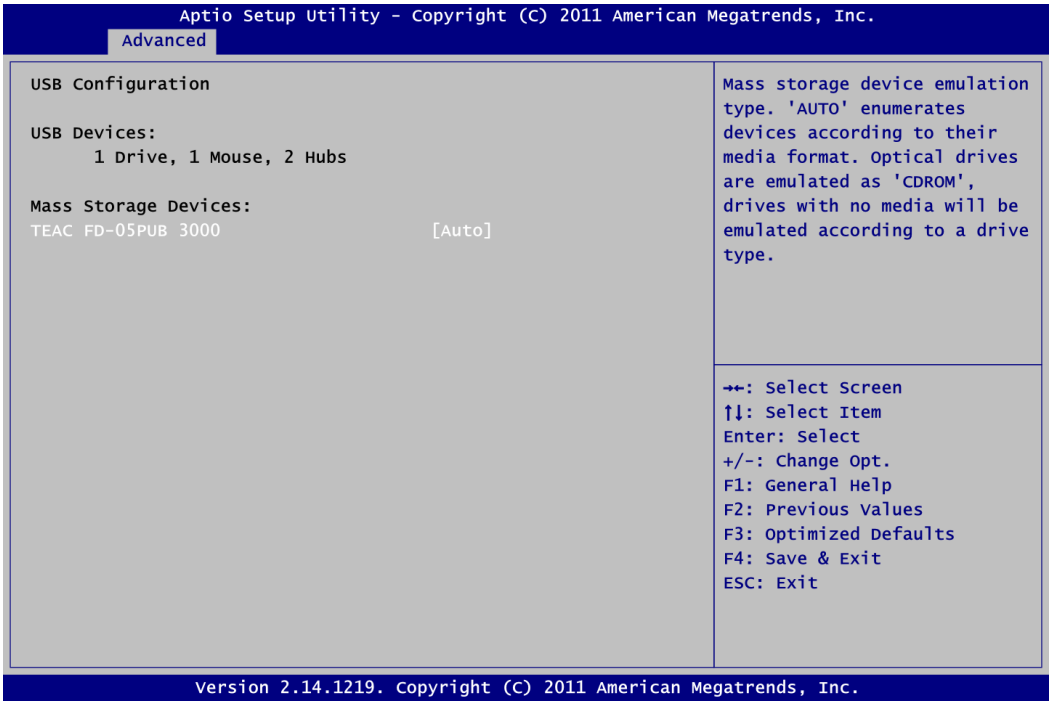
- **AMT Configuration**
  Use this screen to configure AMT parameters.



Intel AMT
Enable or disable Intel® Active Management Technology BIOS Extension.

Disable ME
Enable or disable ME functionality.

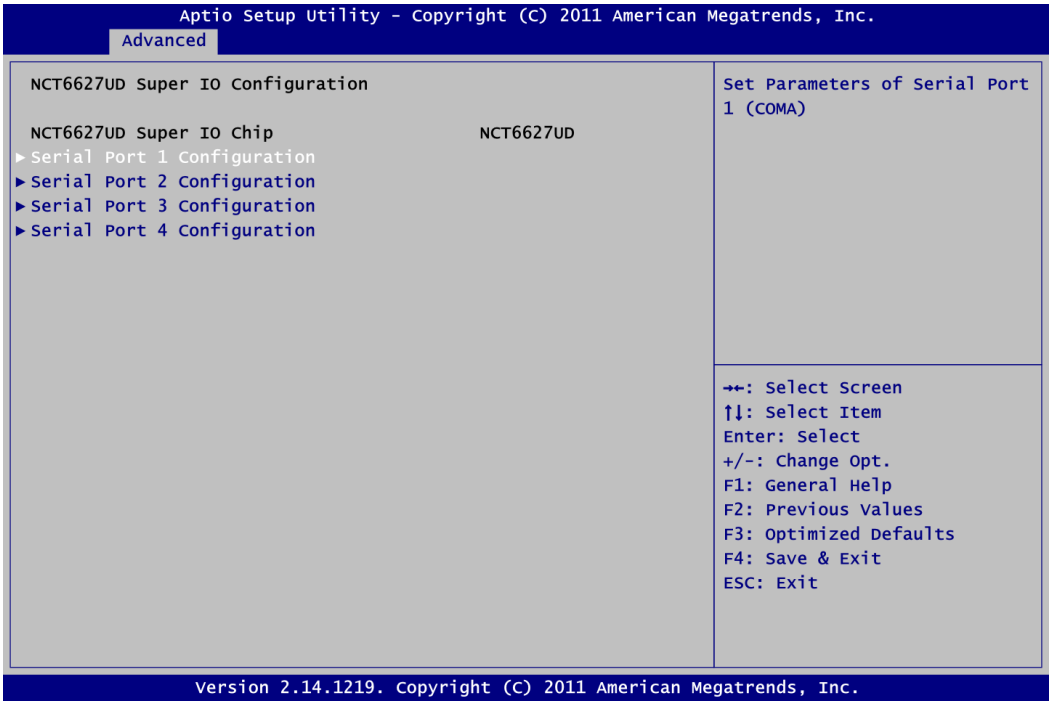
- **USB Configuration**
  You can use this screen to select options for the USB Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



USB Devices
Displays all detected USB devices.

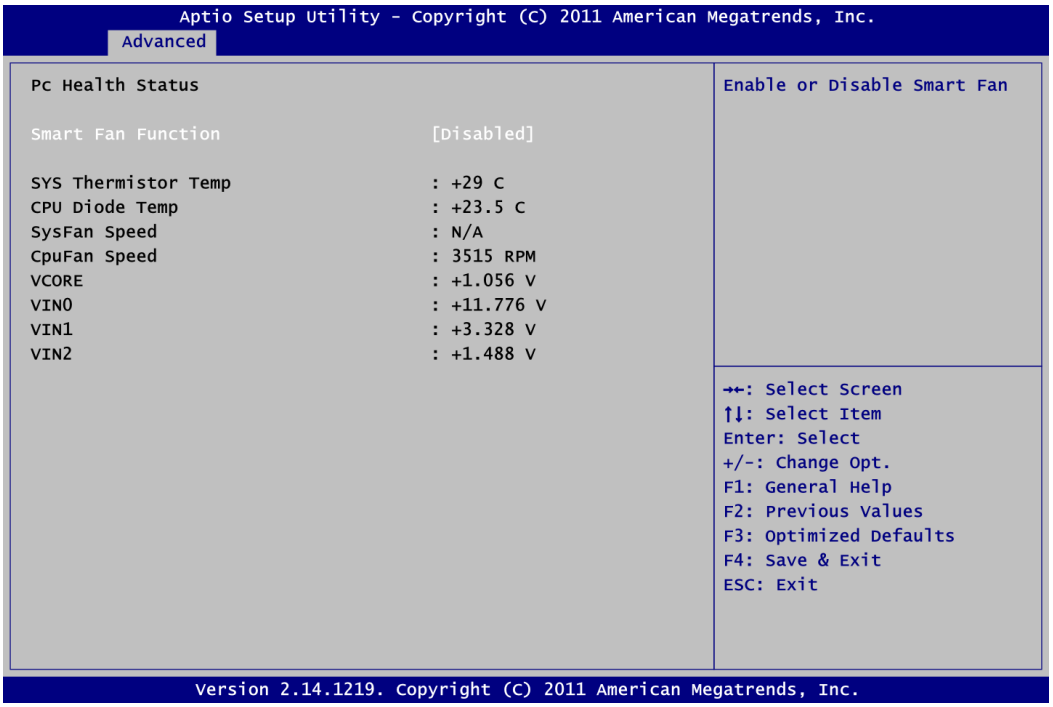
Mass Storage Devices
Mass storage device emulation type. Auto option enumerates devices according to their media format. Optical drives are emulated as CDROM, drives with no media will be emulated according to a drive type.

- **NCT6627UD 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. For items marked with "►", please press <Enter> for more options.



Serial Port 1~4 Configuration
Use this item to set parameters of serial port 1 to 4.

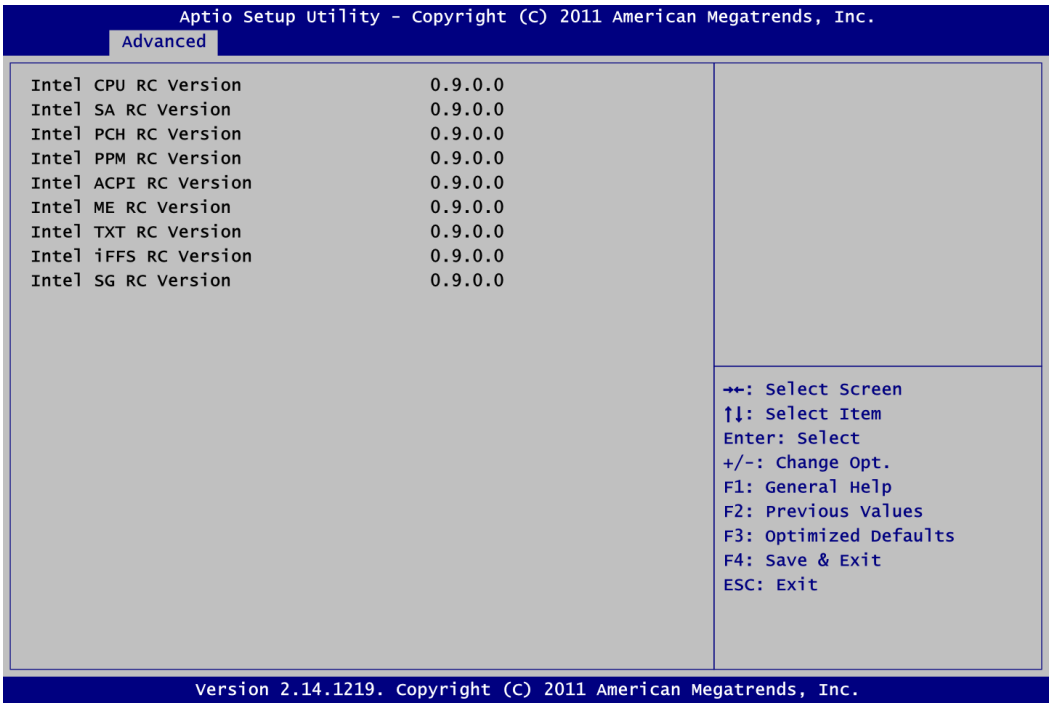
- **NCT6627UD HW Monitor**
  This screen monitors hardware health status.



This screen displays the temperature of system and CPU, cooling fan speed in RPM and system voltages (VCORE, VIN0, VIN1 and VIN2).

Smart Fan Function
Enable or disable Smart Fan function.

- **Intel RC Drivers Version Detail**
  This screen displays Intel® RC drivers version information.

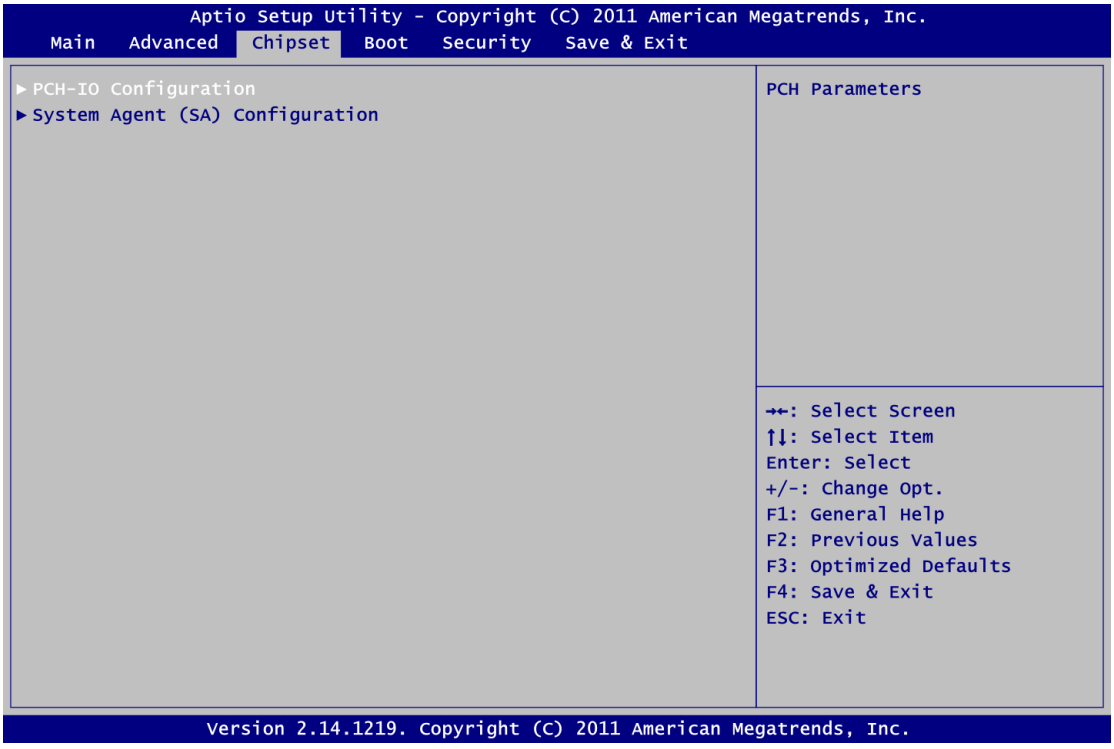


5.5 Chipset Menu

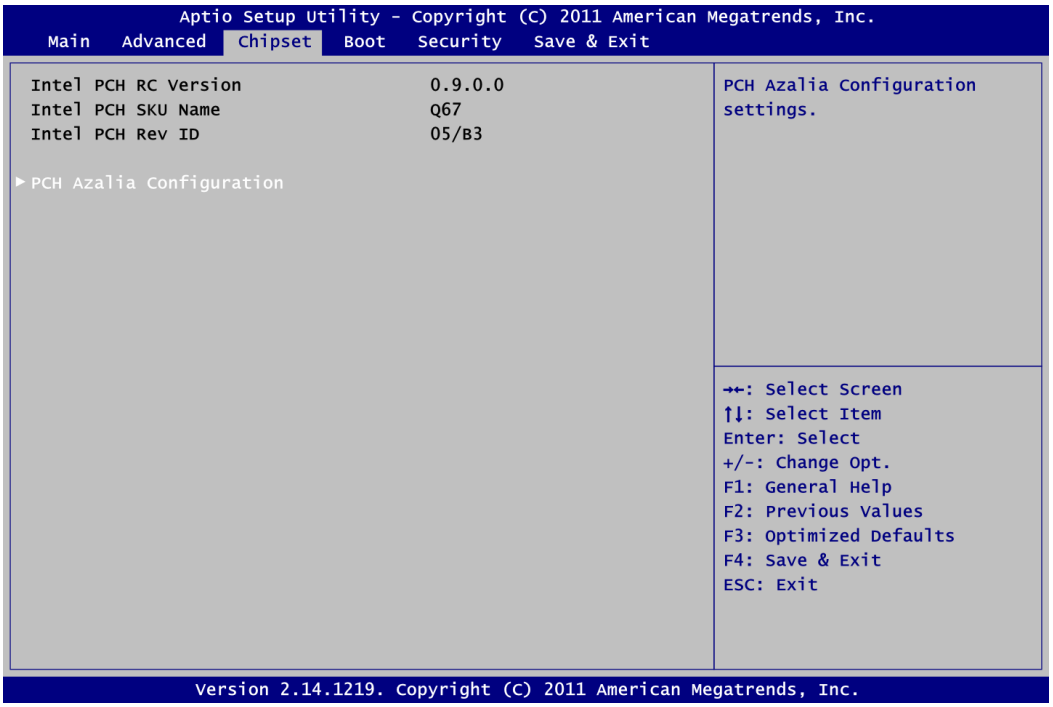
The Chipset menu allows users to change the advanced chipset settings. You can select any of the items in the left frame of the screen to go to the sub menus:

- ► PCH-IO Configuration
- ► System Agent (SA) Configuration

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

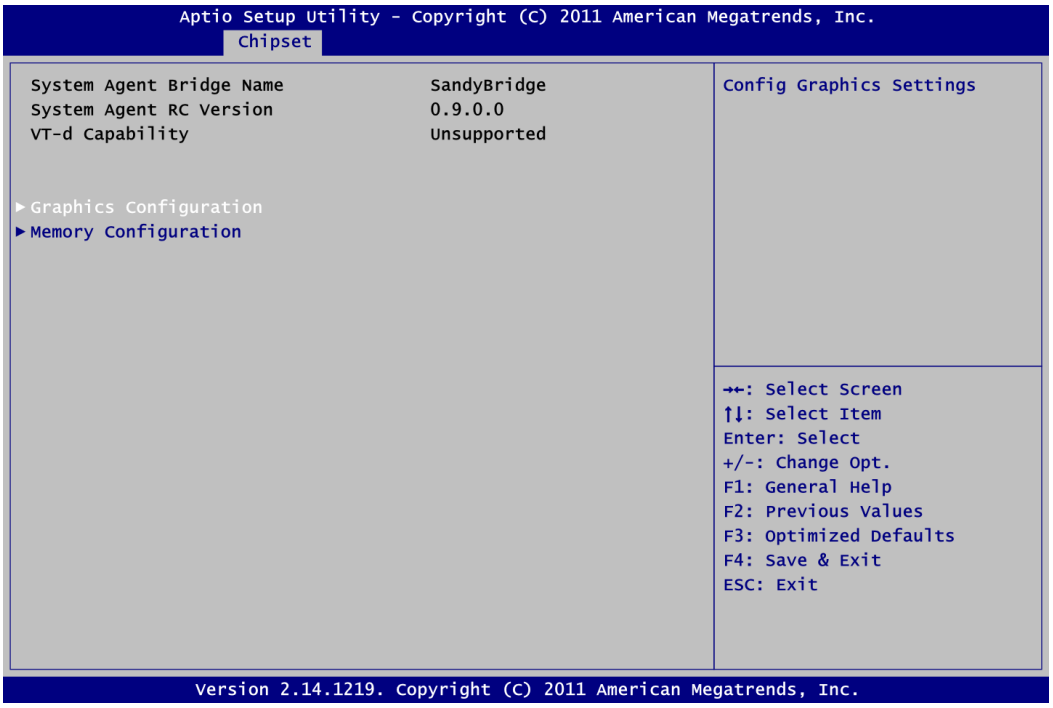


- **PCH-IO Configuration**
  This screen allows you to set PCH parameters.



PCH Azalia Configuration
Use this item to set PCH Azalia HD audio configuration.

- **System Agent (SA) Configuration**
  This screen shows System Agent version information and provides function for specifying related parameters.

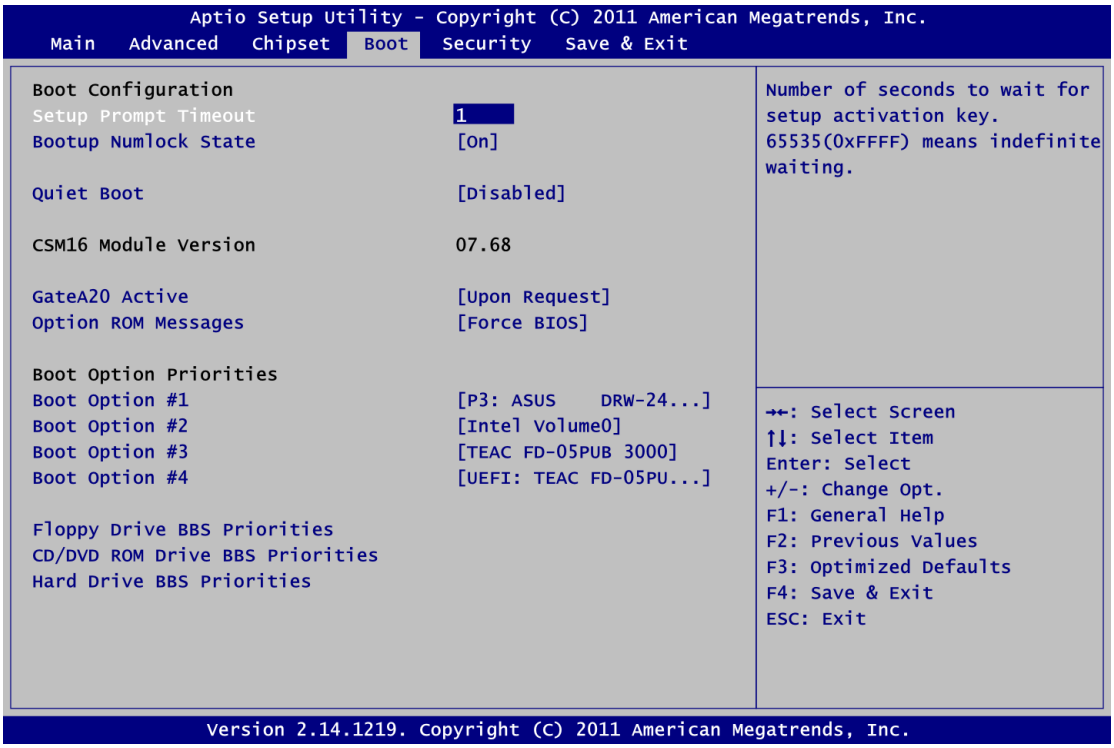


Graphics Configuration
Use this item to set graphics configuration.

Memory Configuration
Use this item to set memory configuration.

5.6 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.

- **GateA20 Active**
  If Upon Request is selected, GA20 can be disabled using BIOS services. If Always is selected, disabling G20 is not allowed; this option is useful when any RT code is executed above 1MB.

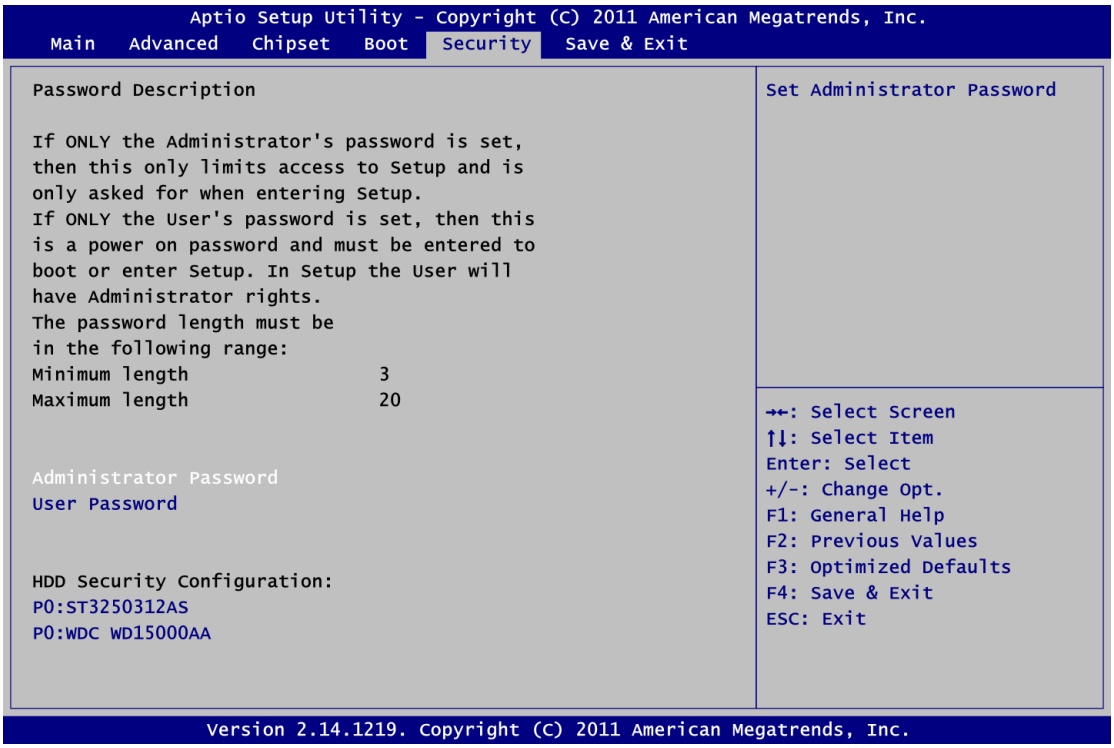
- **Option ROM Messages**
  Set display mode for option ROM. Configuration options are Force BIOS and Keep Current.

- **Boot Option Priorities**
  These are settings for boot priority. Specify the boot device priority sequence from the available devices.

- **Floppy Drive BBS/CD/DVD ROM Drive BBS/Hard Drive BBS Priorities**
  These items are for configuring the boot order for a specific device class. These options are only visible if at least one device for this class is detected.

5.7 Security Menu

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

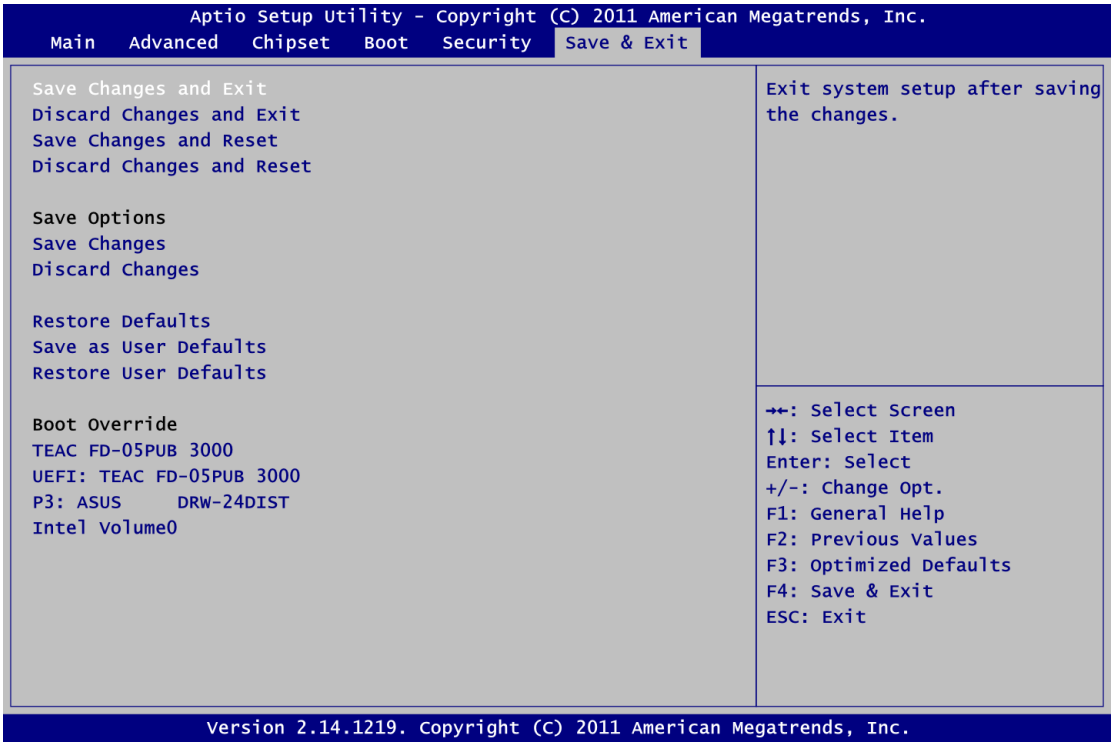


- **Administrator Password**
  This item indicates whether an administrator password has been set (installed or uninstalled).

- **User Password**
  This item indicates whether an user password has been set (installed or uninstalled).

5.8 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>.

- **Boot Override**
  Select a drive to immediately boot that device regardless of the current boot order.

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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
↓
Un-Lock WDT:
O 2E 87 ; Un-lock super I/O
O 2E 87 ; Un-lock super I/O
↓
Select Logic device:
O 2E 07
O 2F 08
↓
Activate WDT:
O 2E 30
O 2F 01
↓
Set Second or Minute:
O 2E F5
O 2F N ; N=00 or 08 (See *Note* below)
↓
Set base timer:
O 2E F6
O 2F M ; M=00,01,02,…FF(Hex) ,Value=0 to 255
↓
WDT counting re-set timer:
O 2E F6
O 2F M ; M=00,01,02,…FF

;IF to disable WDT:
O 2E 30
O 2F 00 ; Can be disabled at any time

- Timeout Value Range
  - 1 to 255
  - Minute / Second

- Program Example

2E, 87	
2E, 87	
2E, 07	
2F, 08	Logical Device 8
2E, 30	Activate
2F, 01	
2E, F5	
2F, N	Set Minute or Second; N=08 (Min), 00(Sec)
2E, F6	
2F, M	Set Value; M=00~FF

Note:

*If **N**=00h, the time base is set to second.*
***M** = time value*
00h: Time-out Disable
01h: Time-out occurs after 1 second
02h: Time-out occurs after 2 seconds
03h: Time-out occurs after 3 seconds
.
.
FFh: Time-out occurs after 255 seconds

*If **N**=08h, the time base is set to minute.*
***M** = time value*
00h: Time-out Disable
01h: Time-out occurs after 1 minute
02h: Time-out occurs after 2 minutes
03h: Time-out occurs after 3 minutes
.
.
FFh: Time-out occurs after 255 minutes

Appendix B
Digital I/O

Using the Digital Output Function

O 2E 87

O 2E 87

O 2E 07

O 2F 08

O 2E 30

O 2F 02 Setting DIO is active

O 2E E0

O 2F **00** **00**: The respective DIO is programmed as an output port

O 2E E1

O 2F **NN** **NN**: Setting output value

Note:
NN*=01 means output value is "00000001", DIO1 is output high, the rest DIO2~DIO8 are output low.*

Using the Digital Input Function

O 2E 87

O 2E 87

O 2E 07

O 2F 08

O 2E 30

O 2F 02 Setting DIO is active

O 2E E0

O 2F **FF** **FF**: The respective DIO is programmed as an input port

O 2E E1

I 2F Read Input value

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Appendix C
Configuring SATA for RAID

Configuring SATA Hard Drive(s) for RAID Function

Before you begin the SATA configuration, please prepare:

- Two SATA hard drives (to ensure optimal performance, it is recommended that you use two hard drives with identical model and capacity). If you do not want to create RAID with the SATA controller, you may prepare only one hard drive.
- An empty formatted floppy disk.
- Windows XP setup disk.

Please follow up the steps below to configure SATA hard drive(s):

1. Install SATA hard drive(s) in your system.
2. Enter the BIOS Setup to configure SATA controller mode and boot sequence.
3. Configure RAID by the RAID BIOS.
4. Making a SATA driver disk.
5. Install the SATA controller driver during the OS installation.

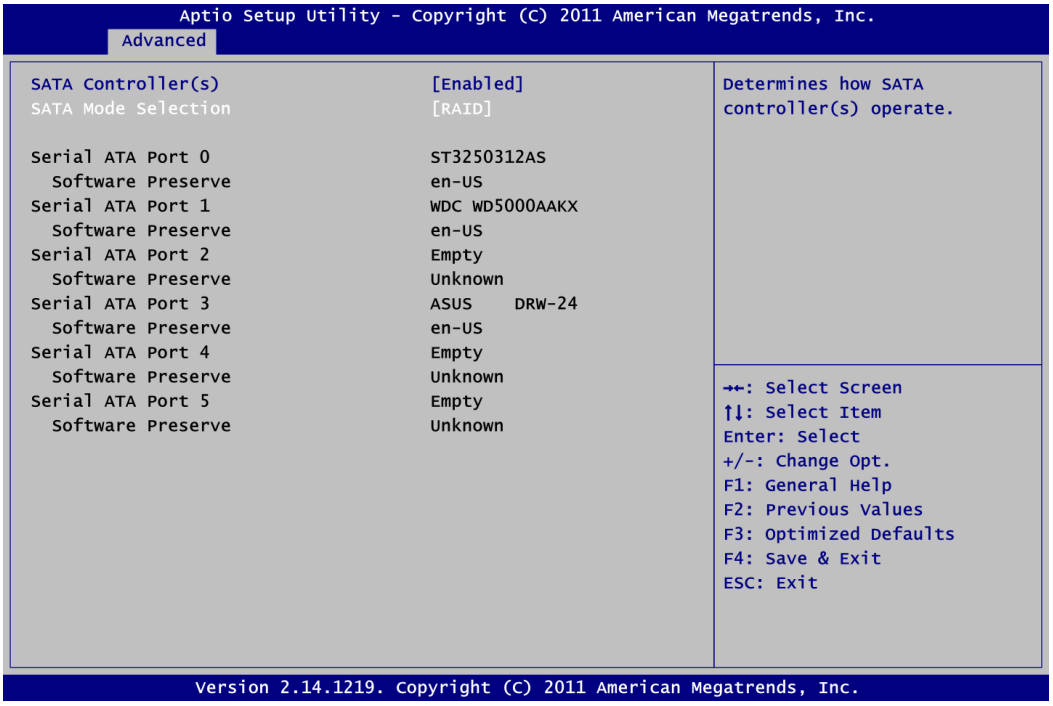
1. Installing SATA hard drive(s) in your system.

Connect one end of the SATA signal cable to the rear of the SATA hard drive, and the other end to available SATA port(s) on the board. Then, connect the power connector of power supply to the hard drive.

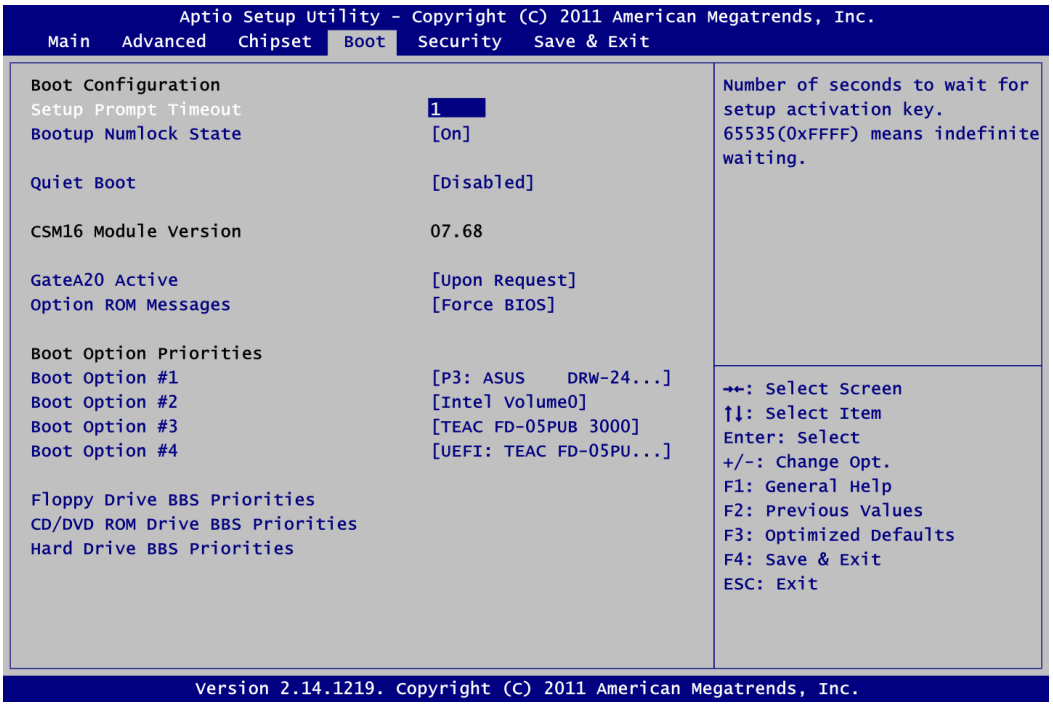
2. Configuring SATA controller mode and boot sequence by the BIOS Setup.

You have to make sure whether the SATA controller is configured correctly by system BIOS Setup and set up BIOS boot sequence for the SATA hard drive(s).

2.1. Turn on your system, and then press the <Del> button to enter BIOS Setup during running POST (Power-On Self Test). If you want to create RAID, just go to the Advanced Settings menu, select the “SATA Mode Selection”, and press <Enter> for more options. A list of options appears, please select “RAID”.



2.2. Set DVD-ROM for First Boot Option under the Boot Settings menu to boot DVD-ROM after system restarts.

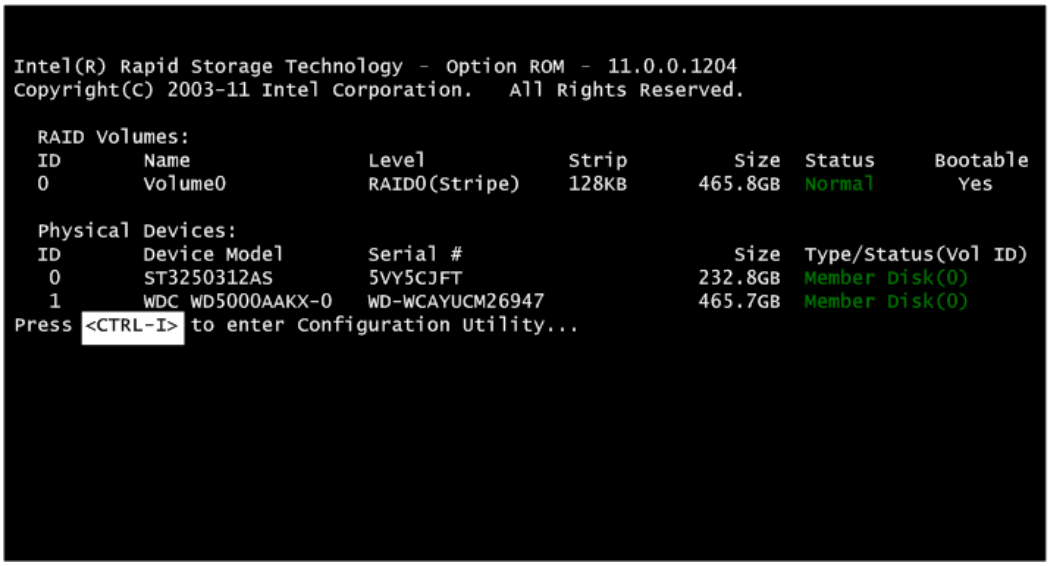


2.3. Save and exit the BIOS Setup.

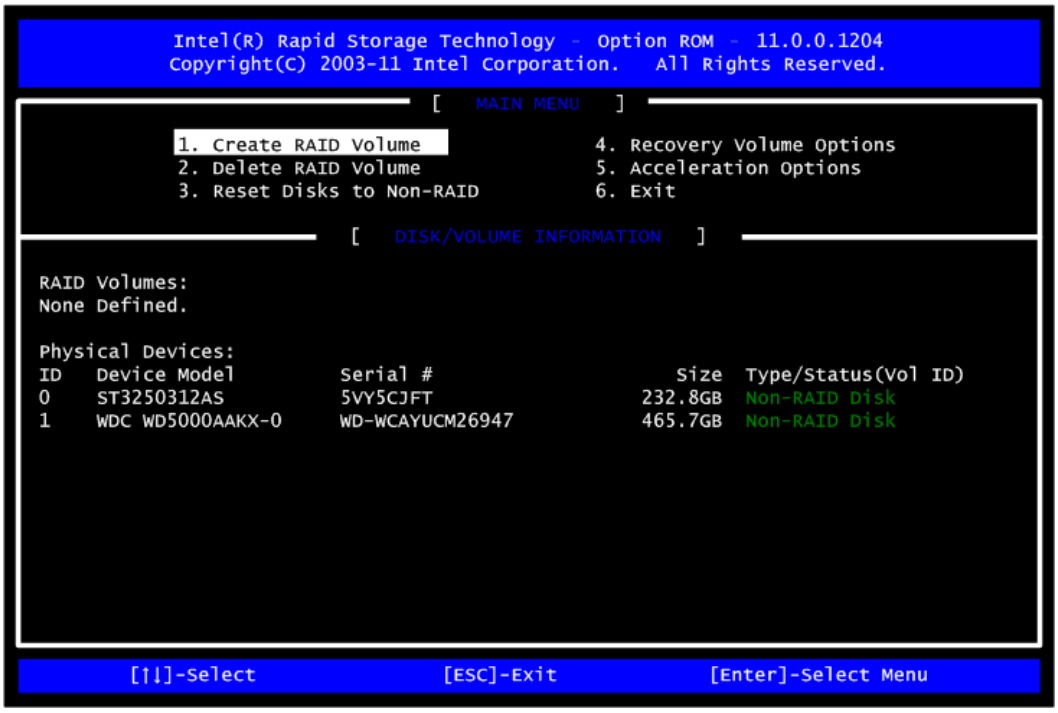
3. Configuring RAID by the RAID BIOS.

Enter the RAID BIOS setup utility to configure a RAID array. Skip this step and proceed if you do not want to create a RAID.

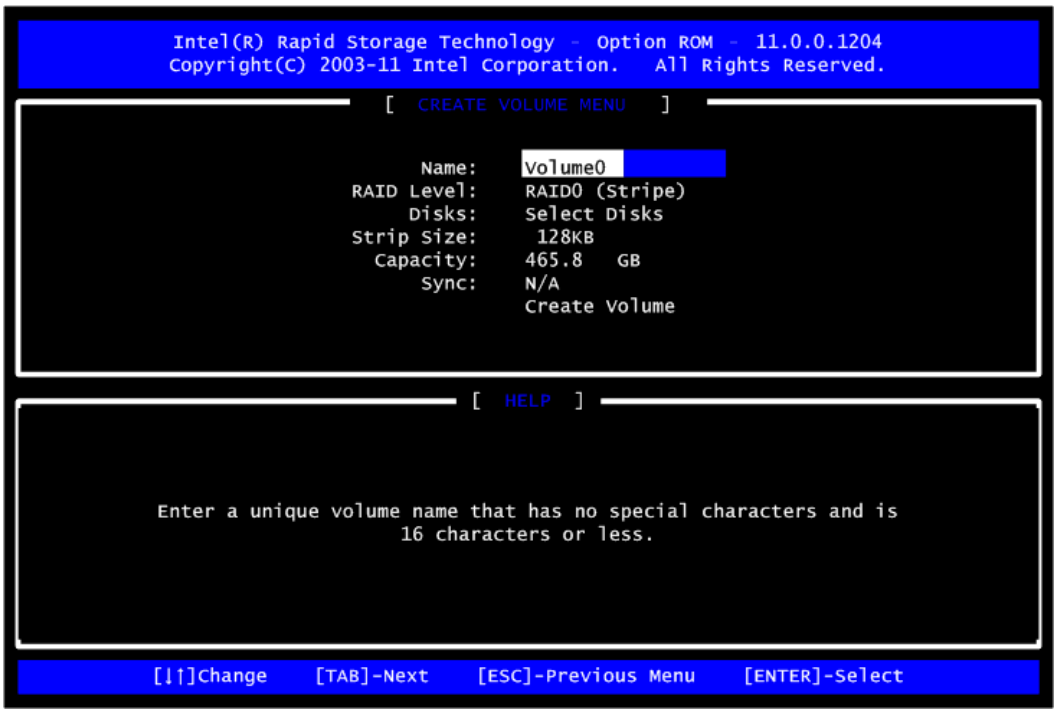
3.1. After the POST memory testing and before the operating system booting, a message "Press <Ctrl-I> to enter Configuration Utility" shows up, accordingly, press <Ctrl + I> to enter the RAID BIOS setup utility.



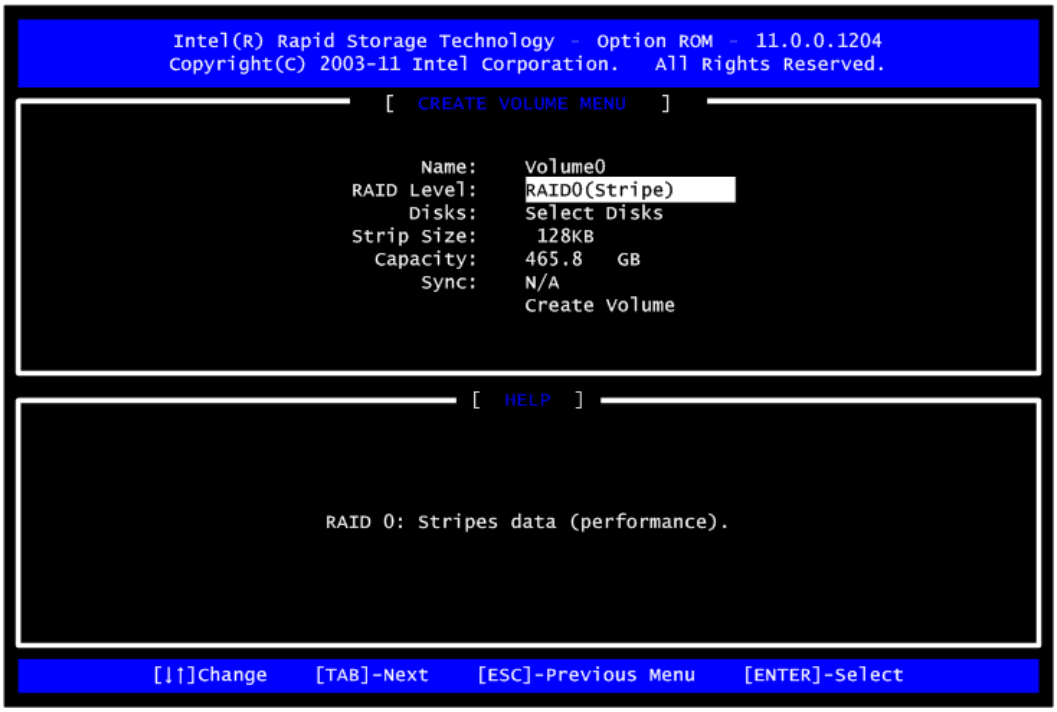
3.2. After you press <Ctrl + I>, the Create RAID Volume screen will appear. If you want to create a RAID array, select the Create RAID Volume option in the Main Menu and press <Enter>.



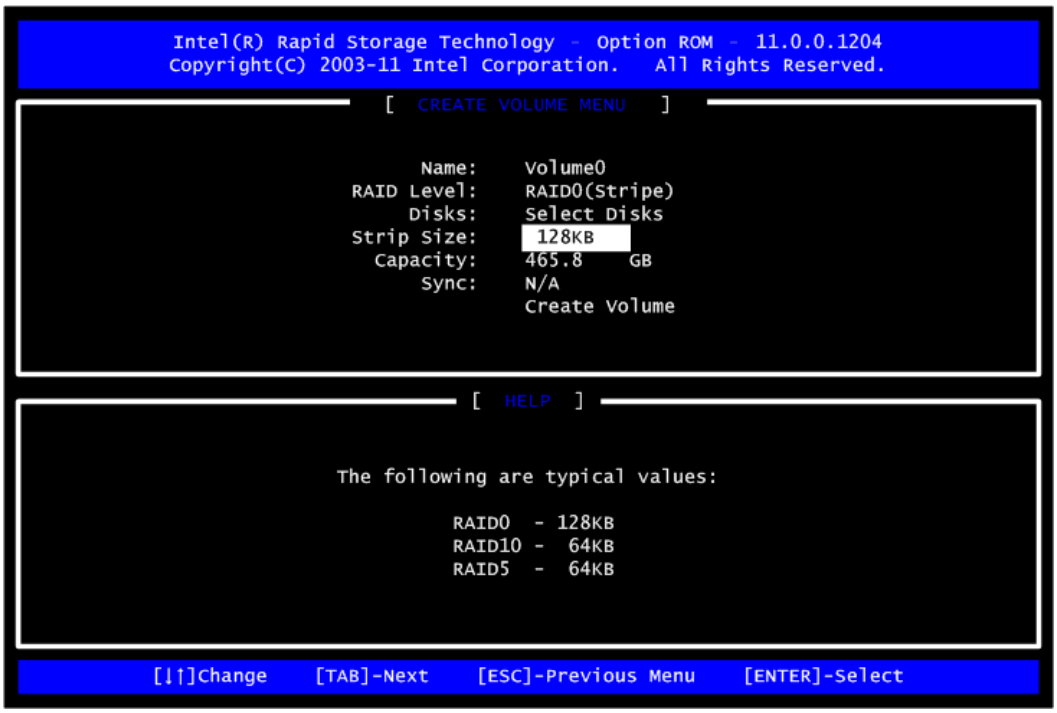
3.3. After entering the Create Volume Menu screen, you can type the disk array name with 1~16 letters (letters cannot be special characters) in the item “Name”.



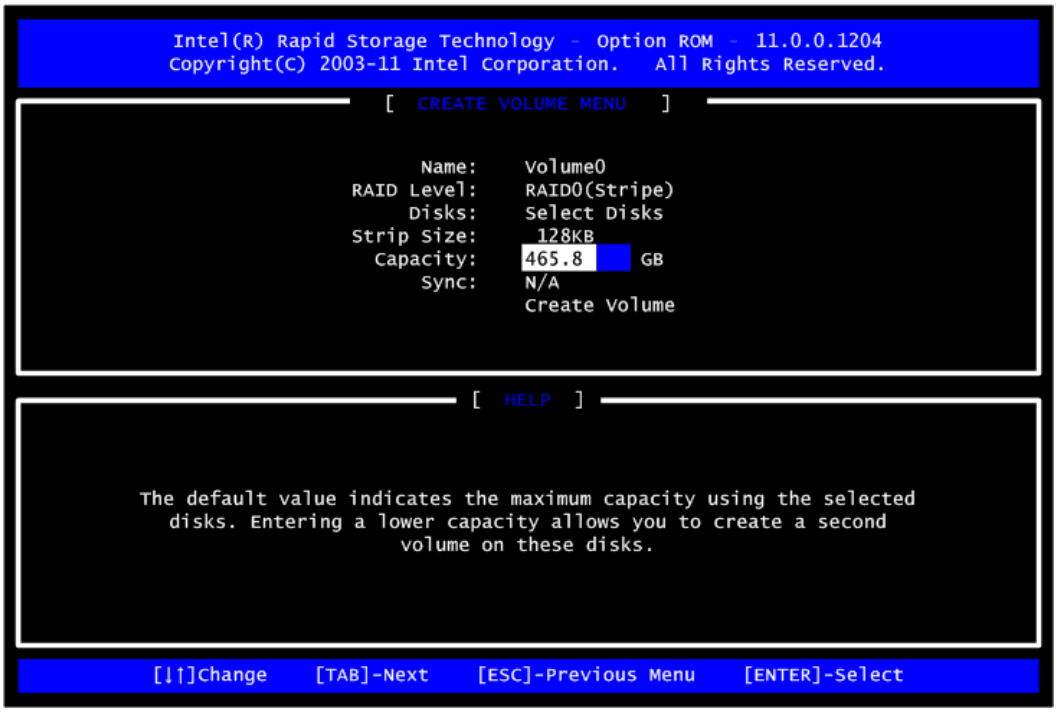
3.4. When finished, press <Enter> to select a RAID level. There are three RAID levels: RAID0, RAID1 and RAID5 & RAID10. Select a RAID level and press <Enter>.



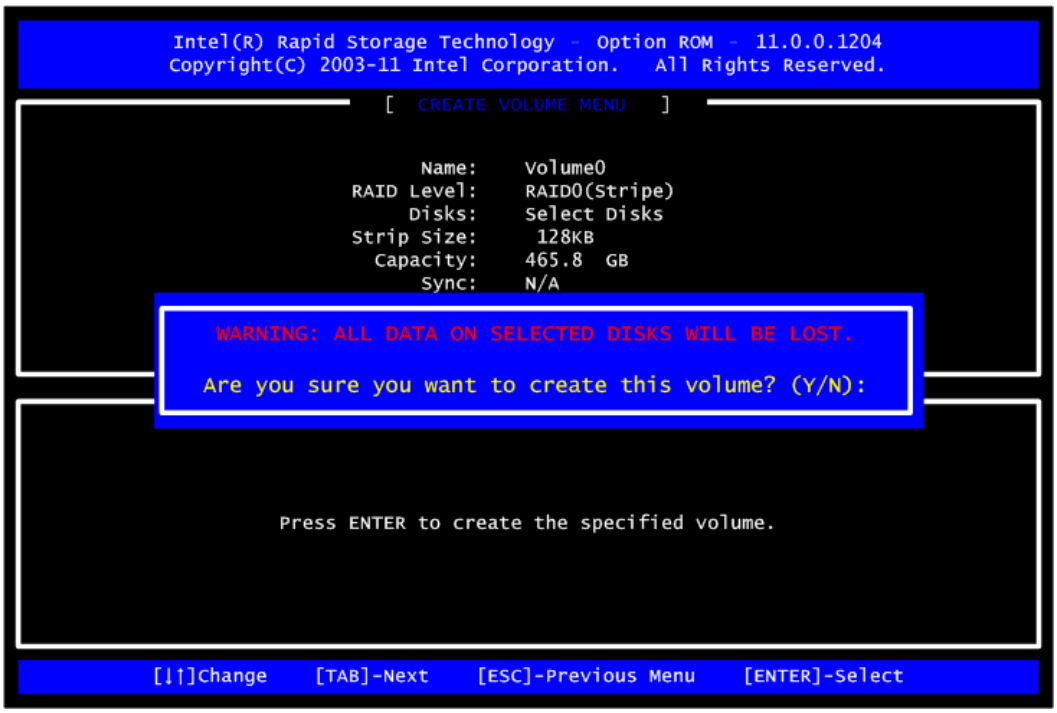
3.5. Set the stripe block size. The KB is the standard unit of stripe block size. The stripe block size can be 4KB to 128KB. After the setting, press <Enter> for the array capacity.



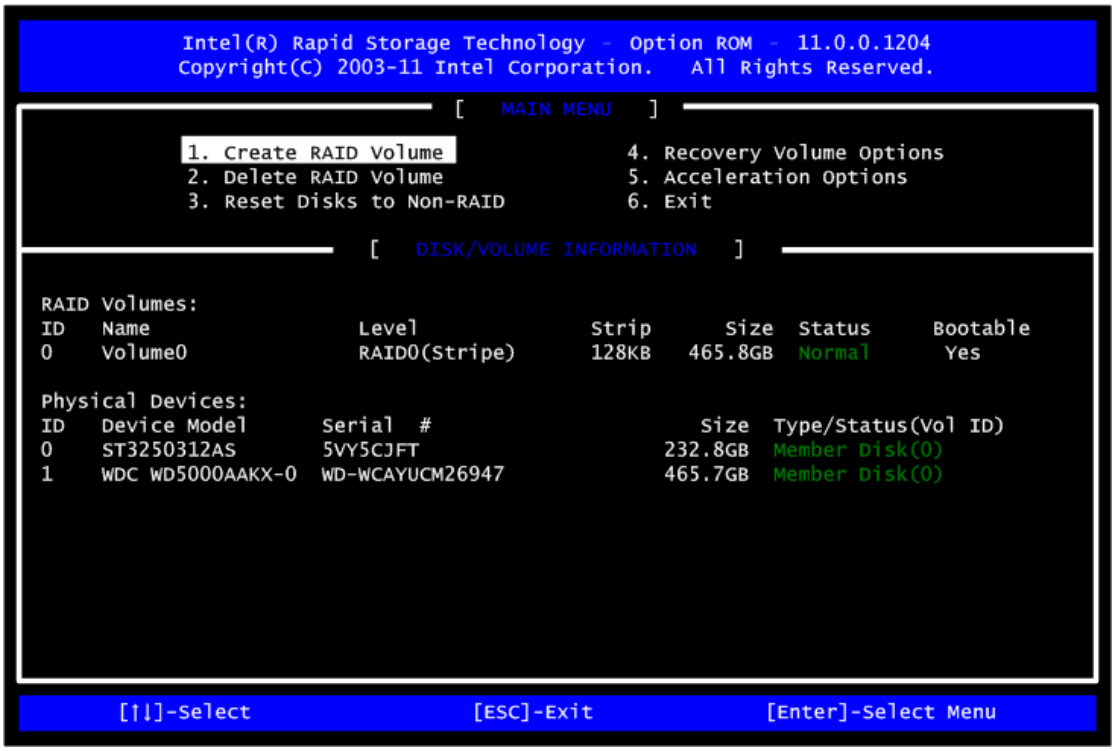
3.6. After setting all the items on the menu, select Create Volume and press <Enter> to start creating the RAID array.



3.7. When prompting the confirmation, press <Y> to create this volume, or <N> to cancel the creation.

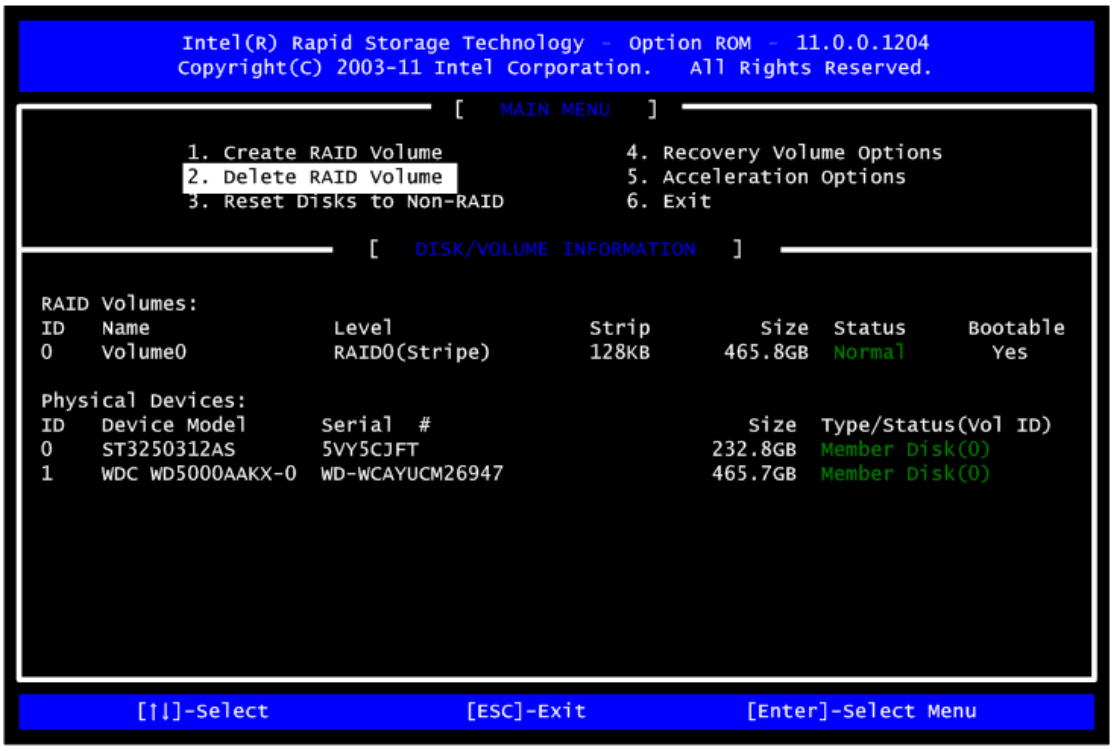


After the creation is completed, you can see detailed information about the RAID Array in the Disk/Volume Information section, including RAID mode, disk block size, disk name, and disk capacity, etc.



Delete RAID volume

If you want to delete a RAID volume, select the Delete RAID Volume option in Main Menu. Press <Enter> and follow on-screen instructions.



Please press <Esc> to exit the RAID BIOS utility. Now, you can proceed to install a SATA driver controller and the operating system.

4. Making a SATA driver disk.

To install the operating system onto a serial ATA hard disk successfully, you need to install the SATA controller driver during the OS installation. Without the driver, the hard disk may not be recognized during the Windows setup process. First of all, please format a blank floppy disk. Secondly, follow up these steps below to produce a SATA driver disk.

Users can insert the driver DVD and the formatted blank floppy disk in another system. And then, please copy all of file of the “f6flpy-x32” folder in the driver DVD to a floppy disk.

Note: ***Please copy all of file of the “f6flpy-x64” folder, if installing 64-bit Windows Operating System.***

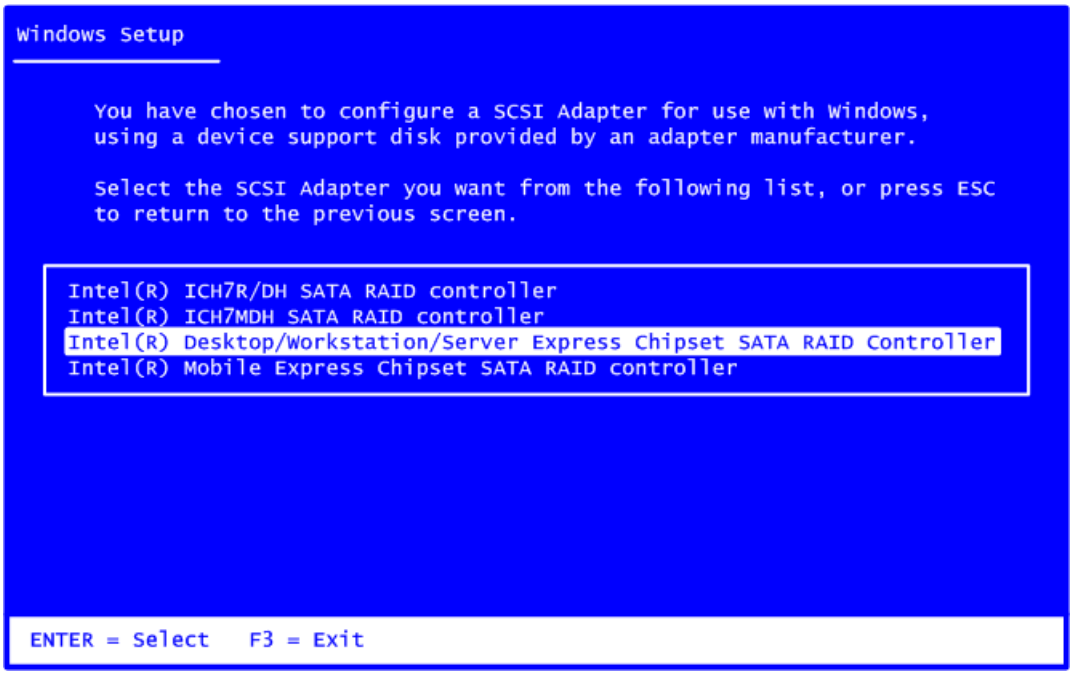
5. Installing the SATA controller driver during the OS installation

Now, the SATA driver disk is ready, and BIOS settings configured, you can proceed to install Windows 2000/XP onto your SATA hard drive using the SATA driver. Here is an example for Windows XP installation.

5.1. Restart your system to boot the Windows 2000/XP Setup disk, and press <F6> button as soon as you see the message "Press F6 if you need to install a 3rd party SCSI or RAID driver". After pressing the <F6> button, there will be a few moments for some files being loaded before next screen appears.

5.2. When you see the screen below, insert the floppy disk containing the SATA driver and press <S>.

5.3. If the Setup correctly recognizes the driver of the floppy disk, a controller menu will appear below. Use the <Arrow> keys to select "Intel(R) Desktop/Workstation/Server Express Chipset SATA RAID Controller" and press <Enter>**.** Then it will begin to load the SATA driver from the floppy disk.



Note: ***If a message on the screen saying that one or some file(s) cannot be found, please check the floppy disk or copy the correct SATA driver again from the driver DVD.***

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Appendix D
Intel® iAMT Settings

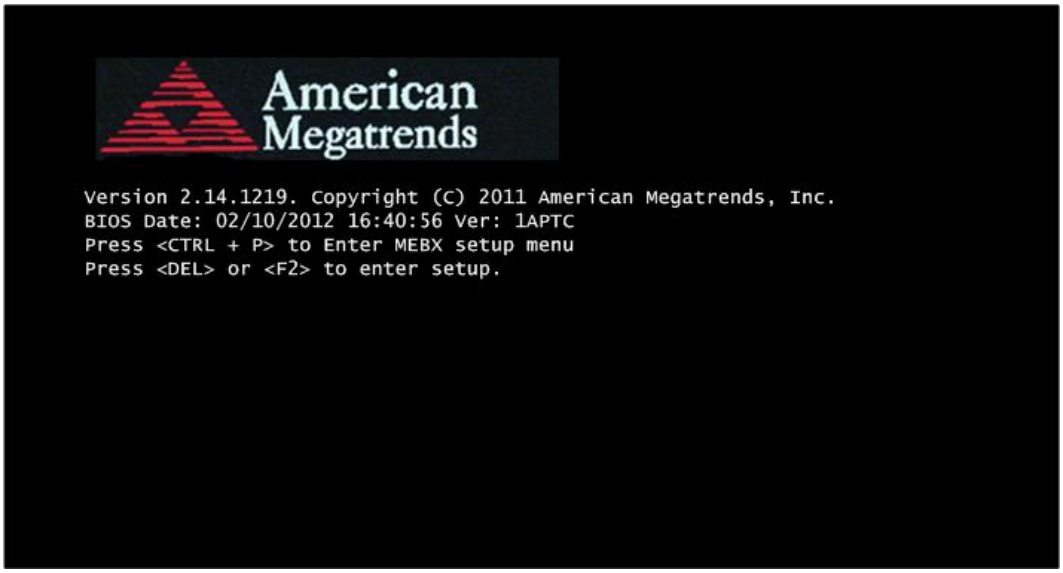
The Intel® Active Management Technology (Intel® iAMT) has decreased a major barrier to IT efficiency that uses built-in platform capabilities and popular third-party management and security applications to allow IT a better discovering, healing, and protection their networked computing assets.

In order to utilize Intel® iAMT you must enter the ME BIOS (<Ctrl + P> during system startup), change the ME BIOS password, and then select “Intel® iAMT” as the manageability feature.

Entering MEBx

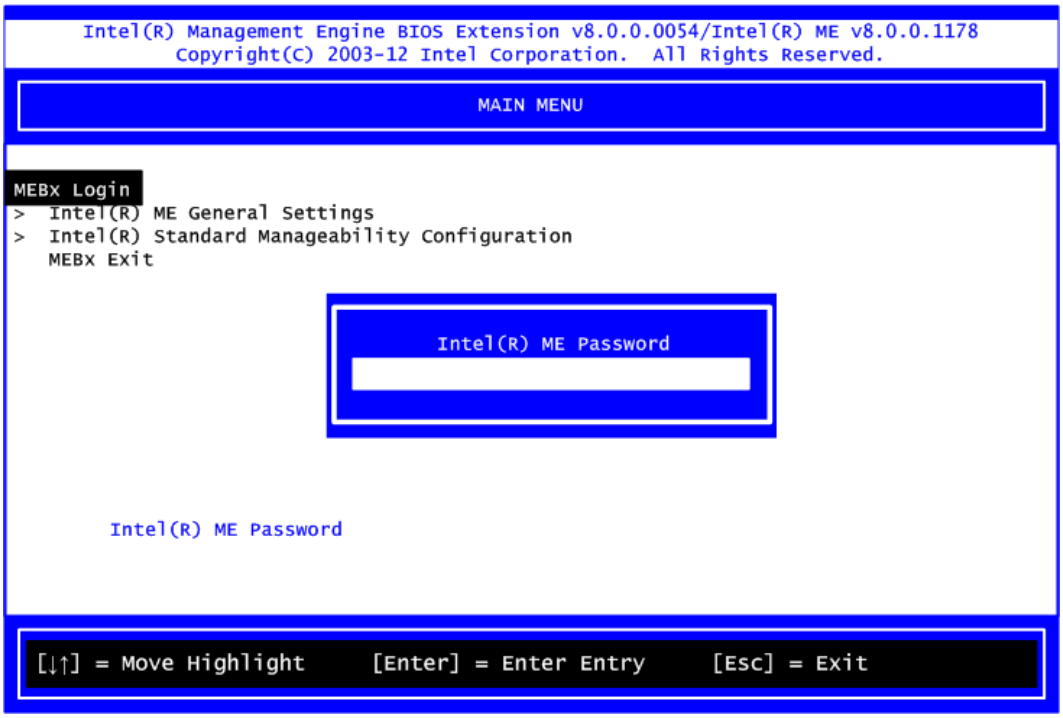
1. You must go to BIOS to enable Intel® iAMT function.
2. Exit from BIOS after starting Intel® iAMT, and press <Ctrl + P> to enter MEBx Setting.

Note: ***It is better to press <Ctrl + P> before the screen popping out.***

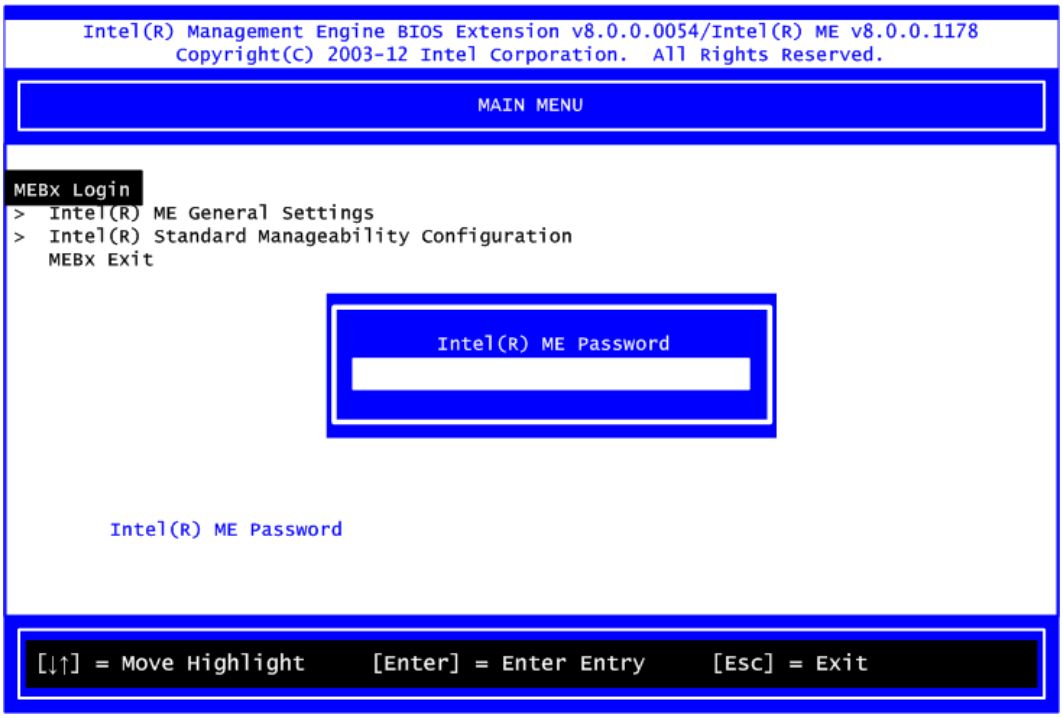


Set and Change Password

1. You will be asked to set a password when first log in. The default password is “admin”.



2. You will be asked to change the password before setting ME.



3. You must confirm your new password while revising. The new password must contain: (example: **!!11qqQQ**) (default value).

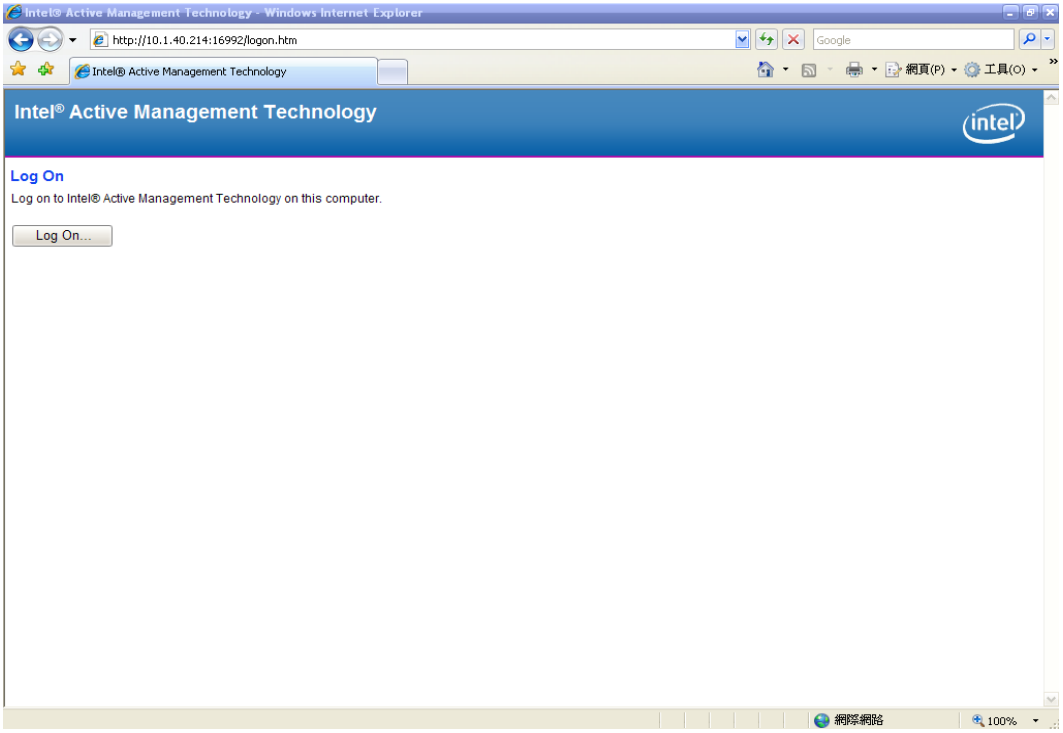
- Eight characters
- One upper case
- One lower case
- One number
- One special symbol, such as ! 、 $ or ; ，(、 " , excepted)

Underline (_) and space are valid characters for password, but they won't make higher complexity.

Intel® iAMT Web Console

1. From a web browser, please type http:///(IP ADDRESS):16992, which connects to Intel® iAMT Web.

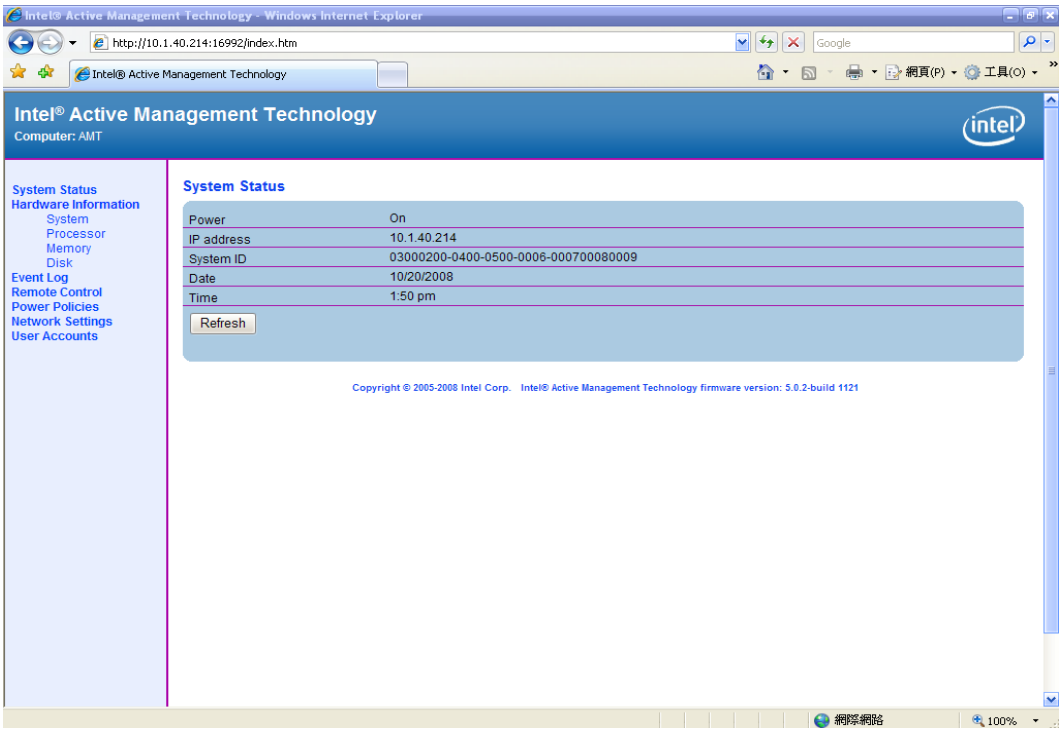
   Example: http://10.1.40.214:16992



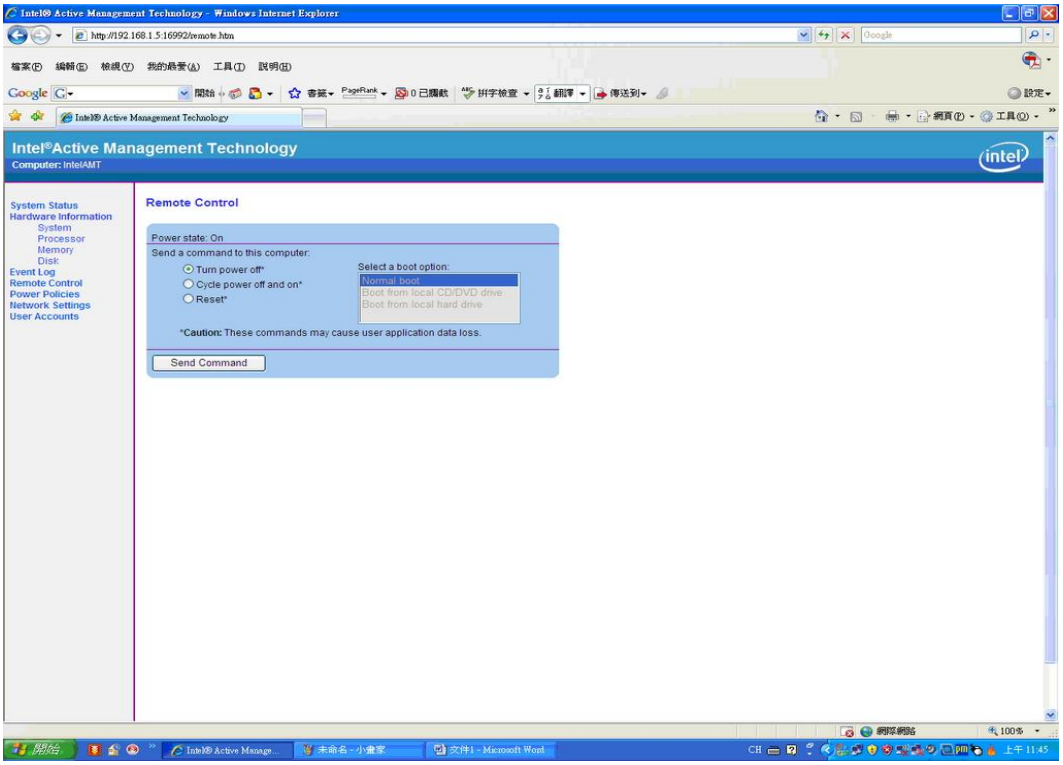
2. To log on, you will be required to type in username and password for access to the Web.

   USER: admin (default value)
   PASS: (MEBx password)

3. Enter the iAMT Web.



4. Click Remote Control, and select commands on the right side.



5. When you have finished using the iAMT Web console, close the Web browser.