

## **AIS-E2**

Advanced System Controller

2.5" HDD/SSD x 1

Gigabit Ethernet x 2

COM x 6, USB2.0 x 2, USB3.0 x 4

HD Audio Codec

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## Packing List

Before you begin operating your PC, please make sure that the following materials are enclosed:

- 1 9761E20000 Gift Box (Including 84W Power adapter, CPU Cooler)
- 1 DVD-ROM for manual (in PDF format) and drivers
- 1 AIS-E2

If any of these items should be missing or damaged, please contact your distributor or sales representative immediately.

## **Safety & Warranty**

1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a firm surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
14. If any of the following situations arises, get the equipment checked by service personnel:
  - a. The power cord or plug is damaged.
  - b. Liquid has penetrated into the equipment.
  - c. The equipment has been exposed to moisture.

- d. The equipment does not work well, or you cannot get it to work according to the user's manual.
  - e. The equipment has been dropped and damaged.
  - f. The equipment has obvious signs of breakage.
15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20°C (-4°F) OR ABOVE 60°C (140°F). IT MAY DAMAGE THE EQUIPMENT.

## FCC

**Warning!**



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

**Caution:**

*There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.*

## Below Table for China RoHS Requirements

产品中有毒有害物质或元素名称及含量

## AAEON Boxer/ Industrial System

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电子组件	×	○	○	○	○	○
外部信号 连接器及线材	×	○	○	○	○	○
外壳	×	○	○	○	○	○
中央处理器 与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
电源	×	○	○	○	○	○
<p><b>O:</b> 表示该有毒有害物质在该部件所有均质材料中的含量均在 <b>SJ/T 11363-2006</b> 标准规定的限量要求以下。</p> <p><b>X:</b> 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 <b>SJ/T 11363-2006</b> 标准规定的限量要求。</p> <p>备注： 一、此产品所标示之环保使用期限，系指在一般正常使用状况下。 二、上述部件物质中央处理器、内存、硬盘、电源为选购品。</p>						

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## Chapter

# 1

## **General Information**

## **1.1 Introduction**

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AIS-E2 adopts the Intel® Core™ i7/ i5/ i3/ Celeron® QC/DC Processor up to 45W. The chipset is equipped with Intel® QM77. Moreover, the system memory features two DDR3 1066/1333/1600 MHz SODIMM up to 16 GB. It deploys two LAN ports that consist of 10/100/1000Base-TX Ethernet RJ-45 ports. AIS-E2 condensed appearance features desktop and wallmount form factor that fits nicely into a space-limited environment.

This AIS-E2 supports up to two 2.5" HDD/SSD. Moreover, the flexible expansion interfaces feature one Mini PCIe socket, and one CFast™. In addition, this model supports one RS-232/422/485 port, optional up to five RS-232 ports, and two USB2.0 and four USB3.0 ports. Furthermore, the Realtek ALC892 supports HD audio codec and the AIS-E2 can support three independent displays with VGA, DVI-D, DP, and HDMI.

With the increasing demands of high performance in audio and video, AAEON released the specific Advanced System Controller to fulfill the needs of the applications, such as Factory Automation, Building Automation, and etc.

## **1.2 Features**

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- Socket 988B, Intel® 3rd Generation Core™ i3/i5/i7 Processor, Up to 45W
- 204-pin Dual Channel DDR3 1066/1333/1600 MHz SODIMM x 2 (Up to 16GB)
- Intel® Integrated Graphics Engine Supports Dual Independent Displays By DP1.1a, VGA, DVI, HDMI
- LAN 1 : Intel® PHY WG82579LM Gigabit Ethernet  
LAN 2 : Realtek RTL 8111E Gigabit Ethernet
- SATA 6.0Gb/s x 2, SATA 3.0Gb/s x 2
- USB 2.0 x 6, USB 3.0 x 4, COM x 2 (Optional extra 4 COM ports)
- Mini PCIe Socket x 1, CFast™ x 1, TPM

### 1.3 Specifications

● CPU		Socket 988B, Intel® 3nd Generation Core™ i3/i5/i7 Processor, Up to 45W
● Chipset		Intel® QM77
● System Memory		204-pin Dual Channel DDR3 1066/1333/1600 MHz SODIMM x2, up to 16GB
● Display Interface	VGA	DB-15 x 1
	DVI	DVI-D x 1
	Others	HDMI x 1, DP x 1
● Storage Device	SSD	CFast x 1
	HDD	2.5" SATA HDD bay x 1 (optional 2 <sup>nd</sup> HDD bay)
● Network	LAN	Gigabit Ethernet
	Wireless	Optional by Mini Card
● Front I/O	USB Host	USB2.0 x 2
	Others	Power Switch x 1
● Rear I/O	USB Host	USB3.0 x 4
	LAN	RJ-45 x 2
	Serial Port	RS-232/422/485 x 1
	Audio	Mic-in, Line-in, Line-out
	KB/MS	PS2 x 2
	Others	Power input x 1

<b>Advanced System Controller</b>	<b>AIS-E2</b>
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● Expansion	Mini Card	Mini Card x 1
● Indicator	Front	PWR, HDD
● Power Requirement		12V DC-in
● System Cooling		CPU cooler x 1 System Cooler x 1
● Mounting		Wallmount
● Operating Temperature		32°F ~ 113°F (0°C ~ 45°C)
● Storage Temperature		-40°F ~ 176°F (-40°C ~ 80°C)
● Anti-Vibration		0.5g rms / 5 ~ 500Hz / operation – HDD 3.5g rms / 5~ 500Hz / operation – SSD
● Anti-Shock		10 G peak acceleration (11 msec. duration) – HDD 20 G peak acceleration (11 msec. duration) – SSD
● Certification	EMC	CE/ FCC class A
● Dimension (W x H x D)		12.4" x 2.76" x 11.81" (315mm x 70mm x 300mm)
● OS Support		Windows® XP Pro, Windows® 7, Linux Kernal 2.6.x

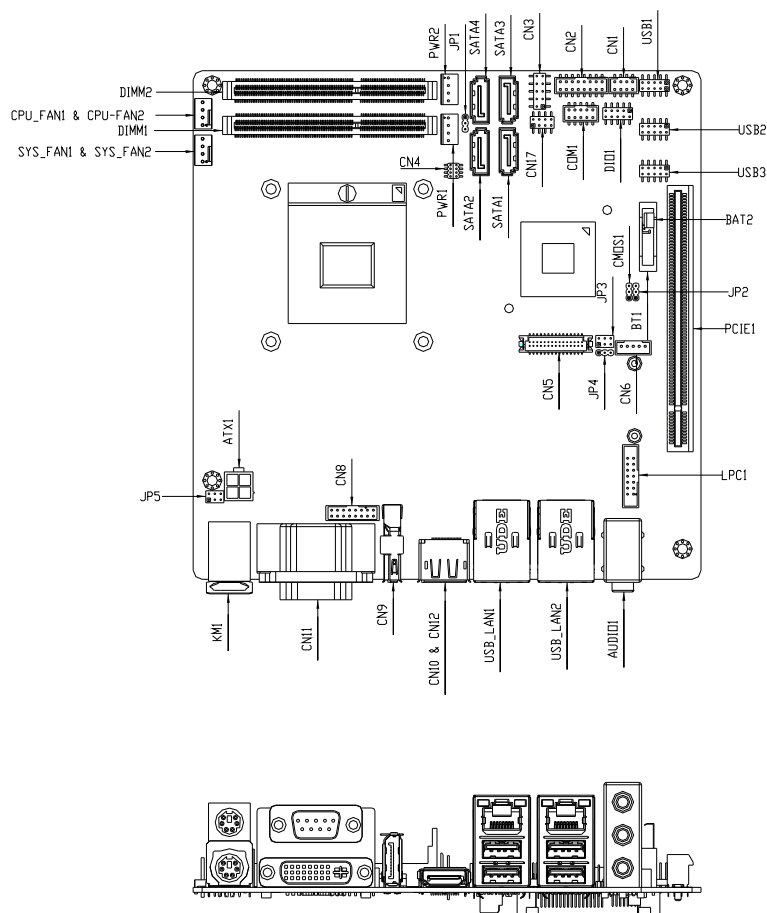
**Chapter**

**2**

**Hardware  
Installation**

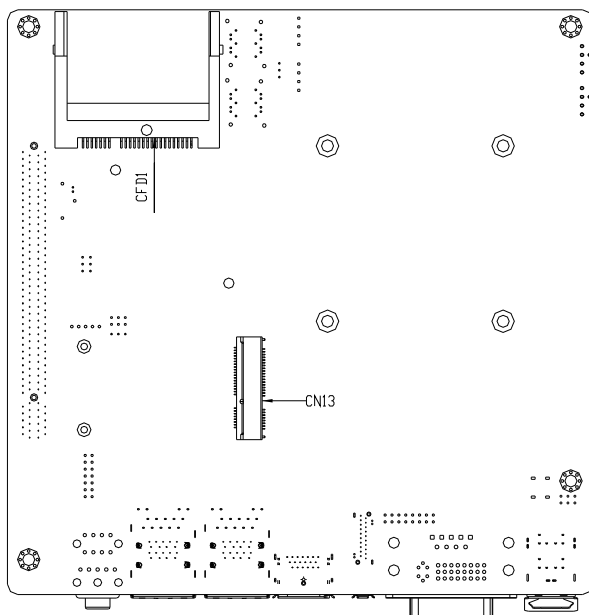
## 2.1 Location of Connectors (Main Board)

### Component Side

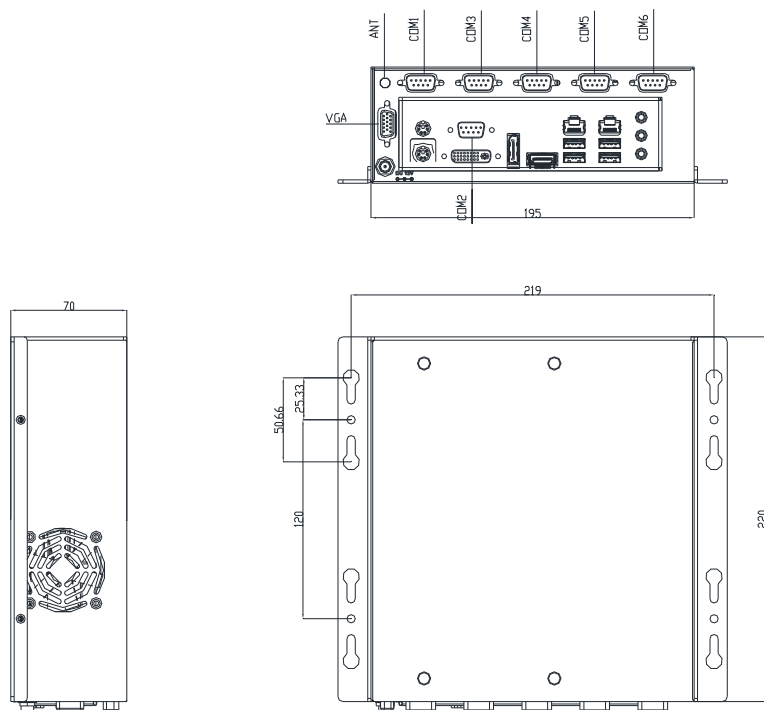




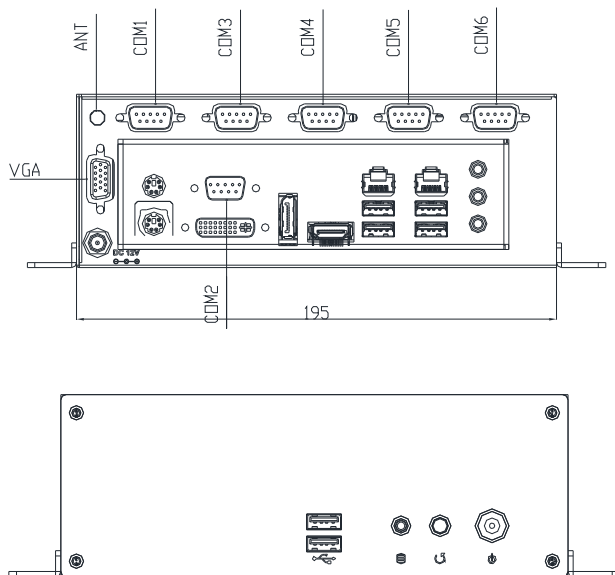
## **Solder Side**



## 2.2 Mechanical Drawing of AIS-E2



## I/O Ports



## 2.3 List of Jumpers

The board has a number of jumpers that allow you to configure your system to suit your application.

The table below shows the function of each of the board's jumpers:

Label	Function
CMOS1	CMOS Setting Selection
JP1	Auto Power Button
JP2	ME Setting Selection
JP5	+12V/+5V/RING Selection

## 2.4 List of Connectors

The board has a number of connectors that allow you to configure your system to suit your application.

The table below shows the function of each of the board's connectors:

Label	Function
PWR1 ~ PWR2	SATA POWER
COM2	COM2 RS232/422/485 D-SUB9 Connector
COM1,3~6	COM3~6 RS232 D-SUB9 Connector
CN3	Front Panel Connector
DVI	DVI-D Connector
VGA	VGA Connector
DP	DP2 Connector
HDMI	HDMI Connector (co-layout)
CN13	Mini Card Connector

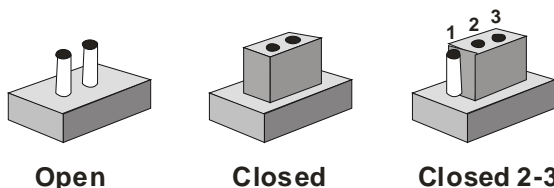
CN14	CFast Connector
KM1	Keyboard/Mouse Connector
SATA1~SATA2	SATA 3.0 Connector
USB_LAN1 ~ USB_LAN2	LAN / USB Connector
DIMM1,DIMM2	DDR3 DIMM Slot
USB1	USB Box Header
FAN1~ FAN2	4 Pin Fan Connector
AUDIO1	AUDIO Connector
ATX1	4 pin 12V DC-IN Connector

## 2.5 Setting Jumpers

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You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper you connect the pins with the clip.

To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.



A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.

Generally, you simply need a standard cable to make most connections.

## 2.6 Clear CMOS (CMOS1)

CMOS1	Function
1-2	Normal (Default)
2-3	Clear CMOS

## 2.7 Auto Power Button (JP1)

JP1	Function
1-2	ATX (Default)
2-3	AT

## 2.8 Clear ME (JP2)

JP2	Function
1-2	Save ME RTC Register (Default)
2-3	Clear ME RTC Register

## 2.9 +12V/+5V/RING Selection (JP5)

JP5	Function
1-2	+12V
3-4	Ring (Default)
5-6	+5V

## 2.10 SATA POWER (PWR1 ~ PWR2)

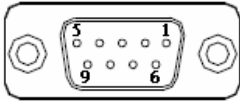


Pin	Signal
1	+12V

Advanced System Controller	AIS - E2
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2	GND
3	GND
4	+5V

### 2.11 COM Port Connector (COM2)



#### RS-232

Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI / +5V / +12V		

#### RS-422

Pin	Signal	Pin	Signal
1	RS422_TX-	2	RS422_RX+
3	RS422_TX+	4	RS422_RX-
5	NC	6	NC
7	NC	8	NC
9	NC / +5V / +12V		

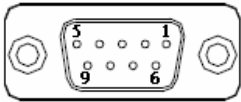
#### RS-485

Pin	Signal	Pin	Signal
1	RS485_D-	2	NC



3	RS485_D+	4	NC
5	NC	6	NC
7	NC	8	NC
9	NC / +5V / +12V		

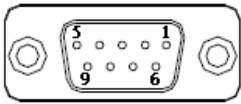
2.12 COM Port Connector (COM1)



RS-232

Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI / +5V / +12V		

2.13 COM Port Connector (COM3~ COM6)

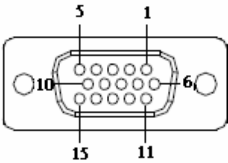


RS-232

Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR

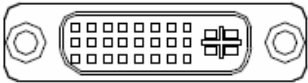
5	GND	6	DSR
7	RTS	8	CTS
9	NC		

2.14 VGA Port Connector (VGA)



Pin	Signal	Pin	Signal
1	Red	2	Green
3	Blue	4	NC
5	GND	6	GND
7	GND	8	GND
9	+5V_CRT	10	GND
11	CRT_PLUG#	12	DDC_DATA
13	CRT_OHSYNCF	14	CRT_OVSYNCF
15	DDC_CLK		

2.15 DVI-D Port Connector (DVI)



Pin	Signal	Pin	Signal
1	DATA2_N	2	DATA2_P
3	GND	4	NC

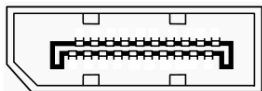
Advanced System Controller		AIS - E2	
5	NC	6	DDC_CLK
7	DDC_DATA	8	NC
9	DATA1_N	10	DATA1_P
11	GND	12	NC
13	NC	14	+5V_DVI
15	GND	16	HPD#
17	DATA0_N	18	DATA0_P
19	GND	20	NC
21	NC	22	GND
23	CLK_P	24	CLK_N

### 2.16 HDMI Port Connector (HDMI)

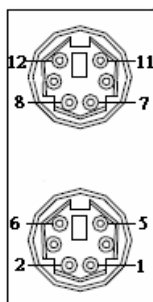


Pin	Signal	Pin	Signal
1	DATA2_P	2	GND
3	DATA2_N	4	DATA1_P
5	GND	6	DATA1_N
7	DATA0_P	8	GND
9	DATA0_N	10	CLK_P
11	GND	12	CLK_N
13	NC	14	NC
15	DDC_CLK	16	DDC_DATA
17	GND	18	+5V_HDMI

19 HPD#

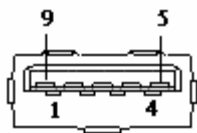
**2.17 Display Port Connector (DP)**

Pin	Signal	Pin	Signal
1	LANE0_P	2	GND
3	LANE0_N	4	LANE1_P
5	GND	6	LANE1_N
7	LANE2_P	8	GND
9	LANE2_N	10	LANE3_P
11	GND	12	LANE3_N
13	GND	14	GND
15	AUX_CH_P	16	GND
17	AUX_CH_N	18	HPD#
19	Return	20	DP_PWR

**2.18 PS/2 keyboard & Mouse Connector (KM1)**

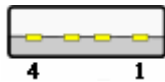
Pin	Signal	Pin	Signal
1	KB_DATA	2	NC
3	GND	4	+5V_KB
5	KB_CLK	6	NC
7	MS_DATA	8	NC
9	GND	10	+5V_KB
11	MS_CLK	12	NC

2.19 USB3.0 Type-A Connector (USB)



Pin	Signal	Pin	Signal
1	+5V_USB	2	USBP_1N
3	USBP_1P	4	GND
5	USB3_RX1_DN	6	USB3_RX1_DP
7	GND	8	USB3_TX1_DN
9	USB3_TX1_DP		

2.20 USB2.0 Type-A Connector (USB)



Pin	Signal	Pin	Signal
1	+5V_USB	2	USBP_1N
3	USBP_1P	4	GND

## 2.21 Front Panel Connector (CN3)

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Pin	Signal	Pin	Signal
1	Power On Button (-)	2	Power On Button (+)
3	HDD LED (-)	4	HDD LED (+)
5	SPEAKER(-)	6	SPEAKER(+)
7	Power LED (-)	8	Power LED (+)
9	Reset Switch (-)	10	Reset Switch (+)

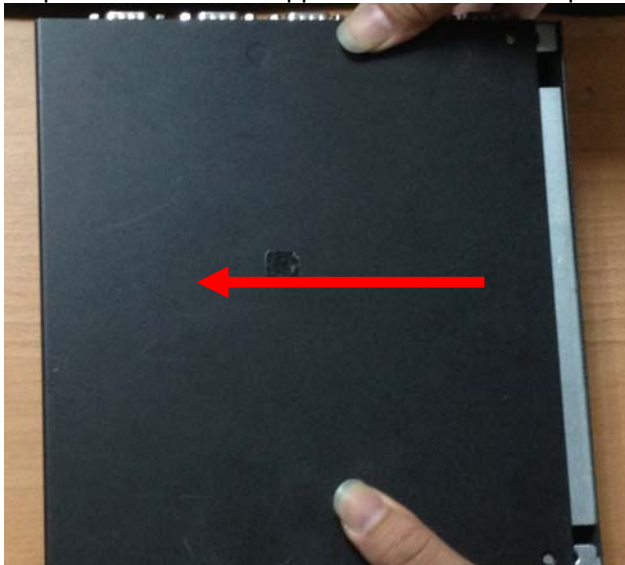
## 2.22 Installing the 2.5" Hard Disk Drive

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Step 1: Unfasten the screws on the right and left sides of AIS-E2



Step 2: Push back the upper lid of AIS-E2 and open it



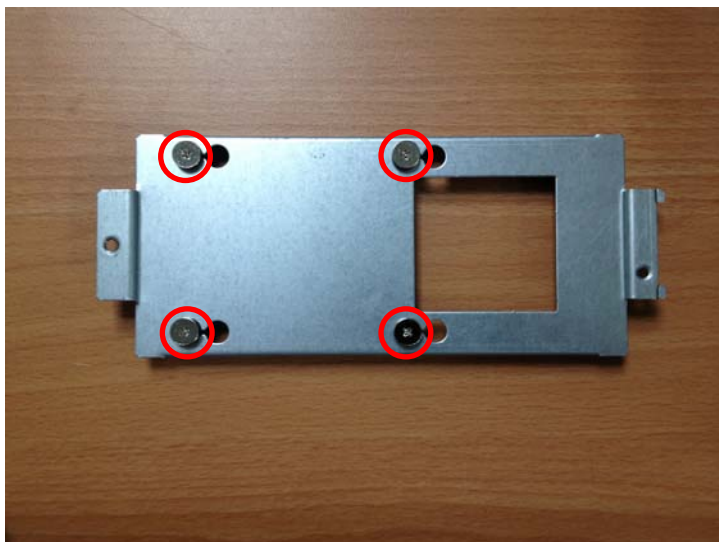
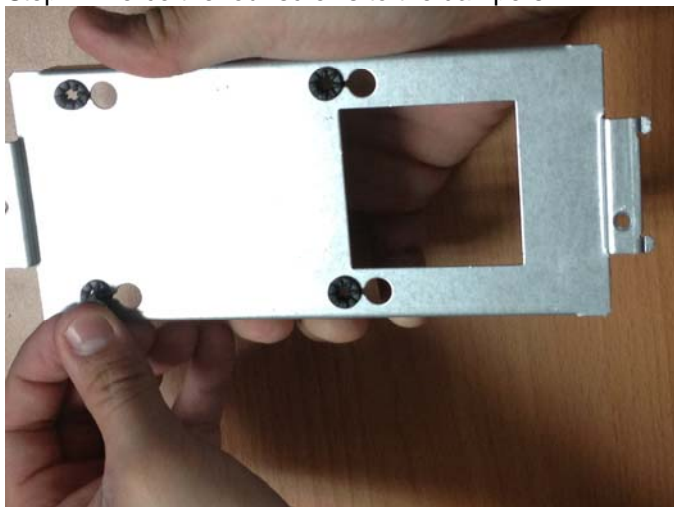
Step 3: Get the HDD bracket ready and insert the dampers to the holes on the bracket







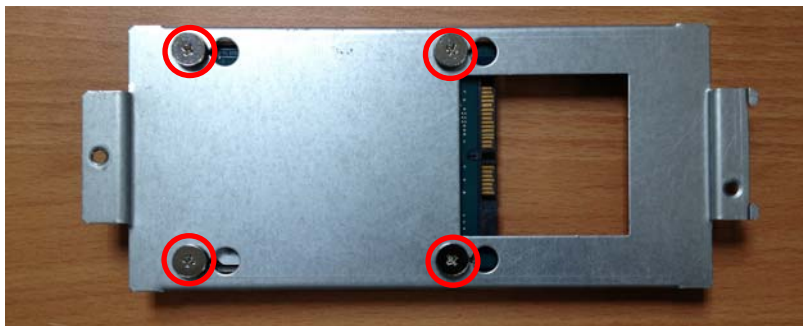
Step 4: Pierce the four screws to the dampers



Step 5: Get the 2.5" HDD ready



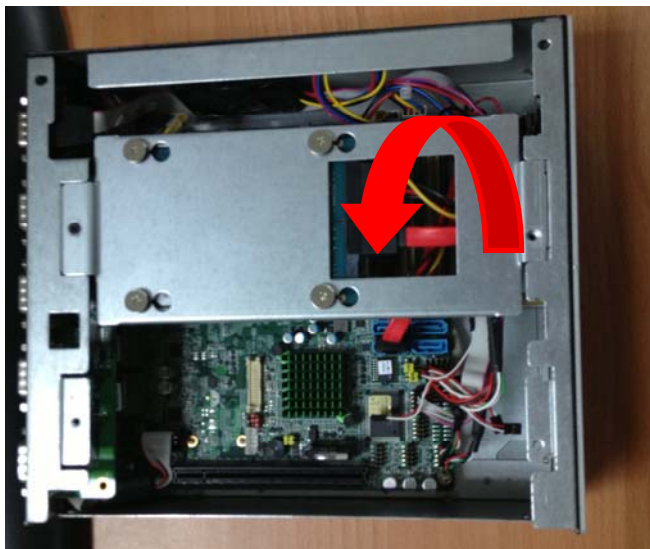
Step 6: Put the HDD to the HDD bracket and fasten the four screws



**Step 7: Connect the SATA and Power cables**



**Step 8: Close the HDD bracket and finish the installation**



## 2.23 Installing the CFast Card

---

Step 1: Unfasten the screw on the bottom lid of AIS-E2



Step 2: Push back the bottom lid of AIS-E2 and open it



Step 3: Insert the CFast Card to the CFast slot and finish installation





## 2.24 Installing the Mini PCIe Card

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Step 1: Unfasten the screw on the bottom lid of AIS-E2



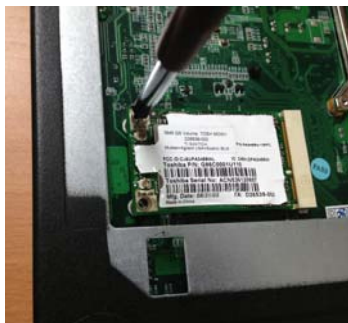
Step 2: Push back the bottom lid of AIS-E2 and open it



Step 3: Insert the Mini PCIe card to the Mini PCIe slot



Step 4: Fasten the two M2.5 screws on the Mini PCIe Card





Step 5: Finish installing the Mini PCIe Card



## Chapter

# 3

## AMI BIOS Setup

### 3.1 System Test and Initialization

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These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors.

#### **System configuration verification**

These routines check the current system configuration against the values stored in the CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The CMOS memory has lost power and the configuration information has been erased.

The AIS-E2 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

## **3.2 AMI BIOS Setup**

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AMI BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

### **Entering Setup**

Power on the computer and press <Del> or <F2> immediately. This will allow you to enter Setup.

### **Main**

Set the date, use tab to switch between date elements.

### **Advanced**

Enable/disable boot option for legacy network devices.

### **Chipset**

Host bridge parameters.

### **Boot**

Enables/disables quiet boot option.

### **Security**

Set setup administrator password.

### **Save&Exit**

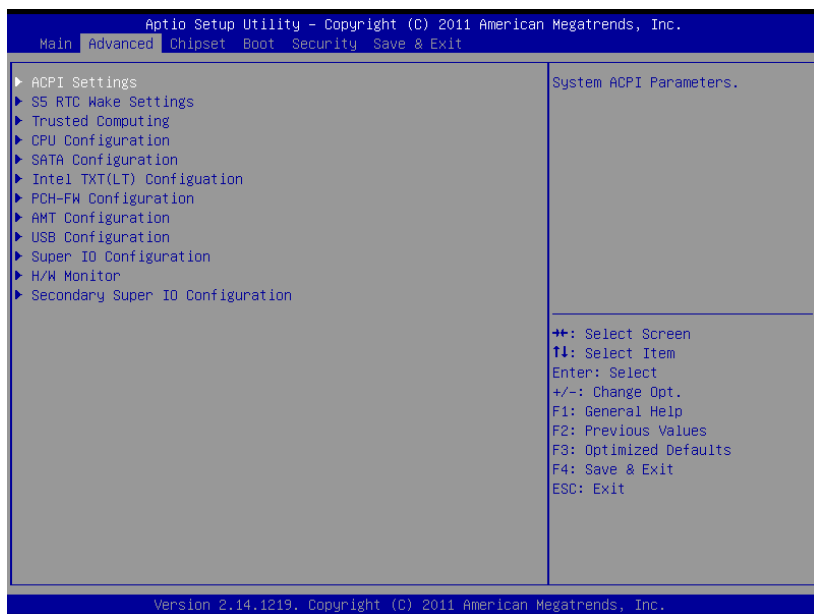
Exit system setup after saving the changes.

## Setup Menu

### Setup submenu: Main

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main Advanced Chipset Boot Security Save & Exit		
BIOS Information AIS-E2 R1.0(ASE2AM10) (10/31/2012)		Set the Date. Use Tab to switch between Date elements.
BIOS Vendor Core Version Compliancy	American Megatrends 4.6.5.3 x64 UEFI 2.3; PI 1.2	
System Date System Time	[Fri 01/02/2009] [20:45:06]	
Access Level	Administrator	
		++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.		

## Setup submenu: Advanced



## ACPI Settings

Apio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

<p>ACPI Settings</p> <p>ACPI Sleep State [S3 only(Suspend to...)]</p>	<p>Select ACPI sleep state the system will enter when the SUSPEND button is pressed.</p>
	<p>                     ++: Select Screen                      F1: Select Item                      Enter: Select                      +/-: Change Opt.                      F1: General Help                      F2: Previous Values                      F3: Optimized Defaults                      F4: Save &amp; Exit                      ESC: Exit                 </p>

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### Options Summary :

ACPI Sleep State	S1 only(CPU Stop Clock)	
	S3 only(Suspend to RAM)	Default
Select the ACPI sleep state the system will enter when the SUSPEND button is pressed.		

## S5 RTC Wake Settings

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Advanced		
Wake system with Fixed Time	[Disabled]	Enable or disable System wake on alarm event. When enabled, System will wake on the hr:min::sec specified
Wake system with Dynamic Time	[Disabled]	
		++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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**Options Summary :**

Wake system with Fixed Time	Disable	Default
	Enable	
Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified.		
Wake up day	0 (Default)	
Select 0 for daily system wake up 1-31 for which day of the month that you would like the system to wake up		
Wake up hour	0 (Default)	
select 0-23 For example enter 3 for 3am and 15 for 3pm		
Wake up minute	0 (Default)	
select 0-59 for minute of an hour.		
Wake up second	0 (Default)	
select 0-59 for second of a minute.		
Wake system with Dynamic Time	Disable	Default
	Enable	
Enable or disable System wake on alarm event. When enabled, System will wake on the current time + Increase minute(s)		
Wake up minute increase	0 (Default)	
select 1 - 5 for minute(s).		

Trusted Computing



Options Summary :

Security Device	Disabled	Default
Support	Enabled	
Enable or Disable BIOS support for security device..		

## CPU Configuration

Apio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

<b>CPU Configuration</b> Intel(R) Core(TM) i7-3610QE CPU @ 2.30GHz CPU Signature 306a9 Microcode Patch c Max CPU Speed 2300 MHz Min CPU Speed 1200 MHz CPU Speed 2300 MHz Processor Cores 4 Intel HT Technology Supported Intel VT-x Technology Supported Intel SMX Technology Supported 64-bit Supported  L1 Data Cache 32 KB x 4 L1 Code Cache 32 KB x 4 L2 Cache 256 KB x 4 L3 Cache 6144 KB  Hyper-threading [Enabled] Intel Virtualization Technology [Disabled]		Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread per enabled core is enabled.  ++: Select Screen Tl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
--	--	--

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### Options Summary :

Hyper-Threading	Disabled	Default
	Enabled	
En/Disable CPU Hyper-Threading function		
Intel Virtualization Technology	Disabled	Default
	Enabled	
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology		

## SATA Configuration (IDE)

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

SATA Controller(s)	[Enabled]	Enable or disable SATA Device.
SATA Mode Selection	[IDE]	
Serial ATA Port 0	Empty	
Serial ATA Port 1	Empty	
Serial ATA Port 2	WDC WD1600BU0T (160.0	
Serial ATA Port 3	Empty	
Serial ATA Port 4	Empty	

++: Select Screen  
 F1: Select Item  
 Enter: Select  
 +/-: Change Opt.  
 F1: General Help  
 F2: Previous Values  
 F3: Optimized Defaults  
 F4: Save & Exit  
 ESC: Exit

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### Options Summary :

SATA Controller(s)	Enabled	Default
	Disabled	
Enable or disable SATA Device.		
SATA Mode Selection	IDE	Default
	AHCI	
	RAID	
Determines how SATA controller(s) operate.		

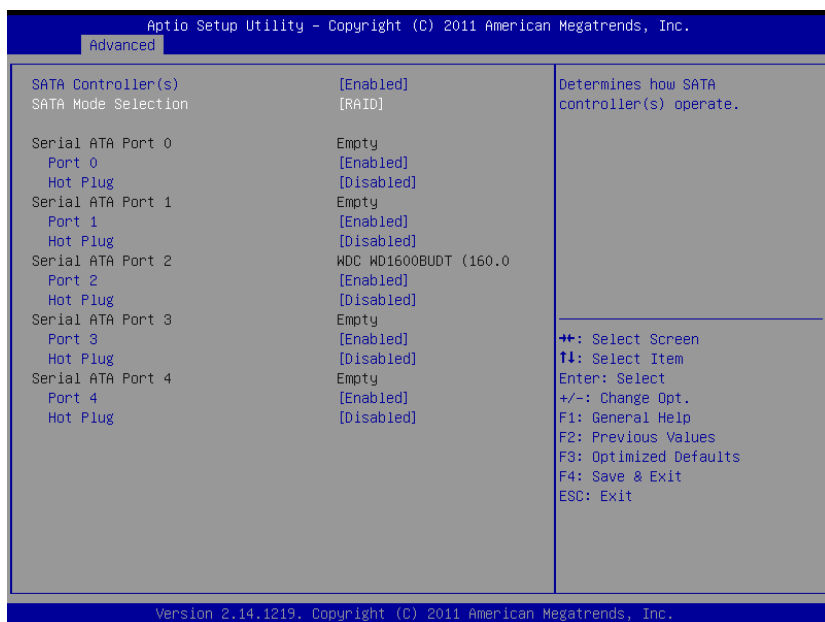
## SATA Configuration (AHCI&RAID)

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

SATA Controller(s)	[Enabled]	Determines how SATA controller(s) operate.
SATA Mode Selection	[AHCI]	
Serial ATA Port 0	Empty	++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Port 0	[Enabled]	
Hot Plug	[Disabled]	
Serial ATA Port 1	Empty	
Port 1	[Enabled]	
Hot Plug	[Disabled]	
Serial ATA Port 2	WDC WD1600BU0T (160.0	
Port 2	[Enabled]	
Hot Plug	[Disabled]	
Serial ATA Port 3	Empty	
Port 3	[Enabled]	
Hot Plug	[Disabled]	
Serial ATA Port 4	Empty	
Port 4	[Enabled]	
Hot Plug	[Disabled]	

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## Options Summary :

SATA Controller(s)	Enabled	Default
	Disabled	
Enable or disable SATA Device.		
SATA Mode Selection	IDE	Default
	AHCI	
	RAID	
Determines how SATA controller(s) operate.		

## Intel TXT(LT) Configuration

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

Intel Trusted Execution Technology Configuration

Intel TXT support only can be enabled/disabled if SMX is enabled. VT and VT-d support must also be enabled prior to TXT.

Secure Mode Extensions (SMX)                      Enabled

Intel TXT(LT) Support                                      [Disabled]

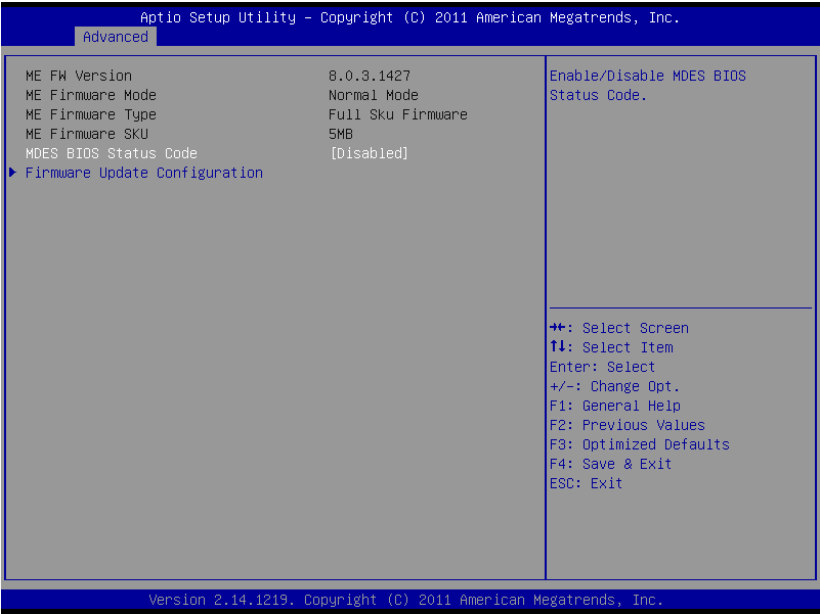
++: Select Screen  
 F1: Select Item  
 Enter: Select  
 +/-: Change Opt.  
 F1: General Help  
 F2: Previous Values  
 F3: Optimized Defaults  
 F4: Save & Exit  
 ESC: Exit

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### Options Summary :

Intel TXT(LT)	Disabled	Default
Support	Enabled	
En/Disable Intel TXT function. This function only can be enabled/disabled if SMX, VT-x and VT-d support are enabled prior to it.		

PCH-FW Configuration



Options Summary :

MDES BIOS	Disabled	Default
Status Code	Enabled	
Enable/Disable MDES BIOS Status Code.		



## Firmware Update Configuration

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

Me FW Image Re-Flash	[Disabled]	Enable/Disable Me FW Image Re-Flash function.
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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### Options Summary :

Me FW Image	Disabled	Default
Re-Flash	Enabled	
Enable/Disable Me FW Image Re-Flash function.		

## Intel AMT Configuration

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Advanced

Intel AMT	[Enabled]	Enable/Disable Intel (R) Active Management Technology BIOS Extension. Note : iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device
Un-Configure ME	[Disabled]	

++: Select Screen  
 F1: Select Item  
 Enter: Select  
 +/-: Change Opt.  
 F1: General Help  
 F2: Previous Values  
 F3: Optimized Defaults  
 F4: Save & Exit  
 ESC: Exit

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### Options Summary :

Intel AMT	Disabled	
	Enabled	Default
Enable/Disable Intel ® Active Management Technology BIOS Extension. Note : iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device		
Un-Configure ME	Disabled	Default
	Enabled	
OEMFlag Bit 15: Un-Configure ME without password.		

## USB Configuration

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Advanced

<p>USB Configuration</p> <p>USB Devices: 1 Drive, 1 Keyboard, 1 Mouse, 2 Hubs</p> <p>Legacy USB Support [Enabled]</p> <p>xHCI Mode [Enabled]</p>		<p>Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.</p>
		<p>↑↓: Select Screen            ↑↓: Select Item            Enter: Select            +/-: Change Opt.            F1: General Help            F2: Previous Values            F3: Optimized Defaults            F4: Save &amp; Exit            ESC: Exit</p>

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### Options Summary :

Legacy USB Support	Enabled	Default
	Disabled	
	Auto	
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.		
xHCI Mode	Enabled	Default
	Disabled	
Enables BIOS Support for xHCI Mode (USB3.0). When disabled, PCH USB3.0 controller will also be disabled. This item should be set to 'Disabled' when using WinXP OS because Intel does not support WinXP for it's USB3.0 controller.		

IT8728 Super IO Configuration



Serial Port 1 Configuration	Set Parameters of Serial Port 1 (COMA)
Serial Port 2 Configuration	Set Parameters of Serial Port 2 (COMB)

## Serial Port 1 Configuration

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.		
Advanced		
Serial Port 1 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=3F8h; IRQ=4;	
Change Settings	[Auto]	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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## Serial Port 2 Configuration

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.		
Advanced		
Serial Port 2 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=2F8h; IRQ=3;	
Change Settings	[Auto]	
Device Mode	[RS-232]	
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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**Options Summary :**

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disable correspond serial port.		
Change Settings (Serial Port 1)	Auto	Default
	IO=3F8h; IRQ=4;	
	IO=3F8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=2F8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=3E8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=2E8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=3F8h; IRQ=3;	
	IO=3F8h; IRQ=3,4,5,6,7,10,11,12;	
Allows BIOS to Select Serial Port resource.		
Change Settings (Serial Port 2)	Auto	Default
	IO=2F8h; IRQ=3;	
	IO=3F8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=2F8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=3E8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=2E8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=3F8h; IRQ=3;	
	IO=3F8h; IRQ=3,4,5,6,7,10,11,12;	
Allows BIOS to Select Serial Port resource.		
Device Mode	RS-232	Default
	RS-422	
	RS-485	
Select working model		

## IT8728 HW Monitor

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.

Advanced

<b>Pc Health Status</b>  CPU Fan1 Control [Disabled] SYS Fan1 Control [Disabled]  CPU Temperature : +33 C PCH Temperature : +34 C System Temperature : +31 C CPU Fan1 Speed : 6617 RPM SYS Fan1 Speed : 6818 RPM VCore : +0.912 V +V1.5S : +1.488 V +V3.3S : +3.336 V +V5S : +5.040 V +V12S : +12.096 V VBAT : +3.048 V		For En/Disable CPU Fan1 Control Enabled: Fan is running in accordance with user settings Disabled: Fan is always running with full speed  ++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
--	--	--

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### Options Summary :

CPU Fan1 Control	Disabled	Default
	Enabled	
For En/Disable CPU Fan1 Control		
SYS Fan1 Control	Disabled	Default
	Enabled	
For En/Disable SYS Fan1 Control		



## Smart Fan Mode Configuration

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Advanced

<b>Pc Health Status</b>  CPU Fan1 Control [Enabled] Fan Control Mode [Manual Mode] PWM Duty 200 SYS Fan1 Control [Enabled] Fan Control Mode [Manual Mode] PWM Duty 200  CPU Temperature : +33 C PCH Temperature : +34 C System Temperature : +31 C CPU Fan1 Speed : 6490 RPM SYS Fan1 Speed : 6818 RPM VCore : +0.912 V +V1.5S : +1.488 V +V3.3S : +3.336 V +V5S : +5.040 V +V12S : +12.048 V VBAT : +3.048 V		For En/Disable CPU Fan1 Control Enabled: Fan is running in accordance with user settings Disabled: Fan is always running with full speed  ++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
--	--	--

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### Options Summary :

(CPU) Fan Control Mode	Manual Mode	Default
	Automatic Mode	
Select (CPU) Fan Control Mode: Manual Mode: Manually controlling the fan with a given control PWM. Automatic Mode: Automatically controlling the fan with given parameters.		
(SYS) Fan Control Mode	Manual Mode	Default
	Automatic Mode	
Select (SYS) Fan Control Mode: Manual Mode: Manually controlling the fan with a given control PWM. Automatic Mode: Automatically controlling the fan with given parameters.		

## F81216 Second Super IO Configuration



### Options Summary :

Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COMC)
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COMD)
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COME)
Serial Port 6 Configuration	Set Parameters of Serial Port 6 (COMF)

## Serial Port 3 Configuration

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Advanced

Serial Port 3 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=2C0h; IRQ=5;	
Change Settings	[Auto]	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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### Options Summary :

Serial Port	Disabled	
	Enabled	Default
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=2C0h; IRQ=5;	
	IO=2C8h; IRQ=5;	
	IO=2B0h; IRQ=5;	
	IO=2B8h; IRQ=5;	
Select an optimal setting for Super IO device.		

## Serial Port 4 Configuration

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Advanced

Serial Port 4 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=2C8h; IRQ=5;	
Change Settings	[Auto]	
		++: Select Screen T1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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### Options Summary :

Serial Port	Disabled	
	Enabled	Default
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=2C0h; IRQ=5;	
	IO=2C8h; IRQ=5;	
	IO=2B0h; IRQ=5;	
	IO=2B8h; IRQ=5;	
Select an optimal setting for Super IO device.		

## Serial Port 5 Configuration

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Advanced

Serial Port 5 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=2B0h; IRQ=5;	
Change Settings	[Auto]	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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### Options Summary :

Serial Port	Disabled	
	Enabled	Default
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=2C0h; IRQ=5;	
	IO=2C8h; IRQ=5;	
	IO=2B0h; IRQ=5;	
	IO=2B8h; IRQ=5;	
Select an optimal setting for Super IO device.		

## Serial Port 6 Configuration

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Advanced

Serial Port 6 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=2B8h; IRQ=5;	
Change Settings	[Auto]	
		++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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### Options Summary :

Serial Port	Disabled	
	Enabled	Default
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=2C0h; IRQ=5;	
	IO=2C8h; IRQ=5;	
	IO=2B0h; IRQ=5;	
	IO=2B8h; IRQ=5;	
Select an optimal setting for Super IO device.		

## Setup submenu: Chipset



## PCH-IO Configuration

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Chipset	
PCH-IO Configuration	
Power Mode	[ATX Type]
Restore AC Power Loss	[Last State]
PCH LAN Controller	[Enabled]
Wake on LAN	[Enabled]
Deep S5	[Disabled]
Mini PCIe Speed	[Gen2]
Select Power Supply Mode.	
++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
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**Options Summary :**

Power Mode	ATX Type	Default
	AT Type	
Select Power Mode: ATX Type: Normal ACPI support AT Type: Suspend/Sleep disabled, and Always On when restoring from power failure.		
Restore AC Power Loss	Power off	
	Power On	
	Last State	Default
Select the action system to take when restoring from power loss.		
PCH LAN Controller	Disabled	
	Enabled	Default
Enabling/Disabling on-chip GbE controller		
Wake on LAN	Disabled	
	Enabled	Default
Enabling/Disabling PXE boot to PCH LAN		
Deep S5	Disabled	Default
	Enabled	
Enabled/Disabled Deep S5. When Deep S5 is enabled, Intel (R) AMT and Wake On PCH LAN functions are not available in system shut down.		
Mini PCIe Speed	Gen1	
	Gen2	Default
Select Mini PCI Express port speed.		

## System Agent (SA) Configuration

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Chipset		
VT-d Capability	Supported	Check to enable VT-d function on MCH.
Memory Frequency	1600 Mhz	
Total Memory	16384 MB (DDR3)	
DIMM#0	8192 MB (DDR3)	
DIMM#2	8192 MB (DDR3)	
VT-d	[Enabled]	
PEG0 - Gen X	[Auto]	
▶ Graphics Configuration		
++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		
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## Graphics Configuration

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Chipset		
Graphics Configuration		Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.
Primary Display	[Auto]	
Internal Graphics	[Auto]	
DVMT Pre-Allocated	[64M]	
DVMT Total Gfx Mem	[MAX]	
▶ Display Control		
		++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.		

**Options Summary :**

VT-d	Disabled	
	Enabled	Default
En/Disable chipset Virtualization Technology function.		
PEG0 – Gen x	Auto	Default
	Gen1	
	Gen2	
	Gen3	
Configure PEG0 B0:D1:F0 Gen1-Gen3.		
Primary Display	Auto	Default
	IGFX	
	PEG	
	PCI	
Select graphics adapters to boot.		
Internal Graphics	Auto	Default
	Disabled	
	Enable	
En/Disable internal graphics device		
DVMT Pre-Allocated	32MB~1024MB	64MB as Default
Select the amount of system memory pre-allocated for Internal graphics device.		
DVMT Total Gfx Mem	128MB	
	256MB	
	Max	Default
Select the amount of system memory used by the Internal graphics device.		

## Display Control

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Chipset

<p>Display Control</p> <p>Boot Display Select [VBIOS Default]</p>		<p>Select the Video Device during POST and DOS. This has no effect if external graphics present.</p>
		<p>←+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</p>

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### Options Summary :

Primary Display	VBIOS Default	Default
	CRT	
	HDMI	
	DVI	
	DisplayPort	
<p>Select boot display device</p> <p>Select the Video Device during POST and DOS.</p> <p>This has no effect if external graphics present.</p> <p>VBIOS Default – Display automatically according to VBIOS algorithm</p>		

## Setup submenu: Boot

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.		
Main Advanced Chipset <b>Boot</b> Security Save & Exit		
Boot Configuration Quiet Boot [Enabled] Launch I82579LM PXE OpROM [Disabled] Launch RTL8111E PXE OpROM [Disabled]		Enables or disables Quiet Boot option
Boot Option Priorities Boot Option #1 [UEFI: InnostorInno...] Boot Option #2 [SATA PS: WDC WD16...]		
Hard Drive BBS Priorities		++: Select Screen F1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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**Options Summary :**

Quiet Boot	Disabled	
	Enabled	Default
En/Disable showing boot logo.		
Launch I82579LM PXE OpROM	Disabled	Default
	Enabled	
Enable or Disable Legacy Boot Option for I82579LM.		
Launch RTL8111E PXE OpROM	Disabled	Default
	Enabled	
Enable or Disable Legacy Boot Option for RTL8111E		

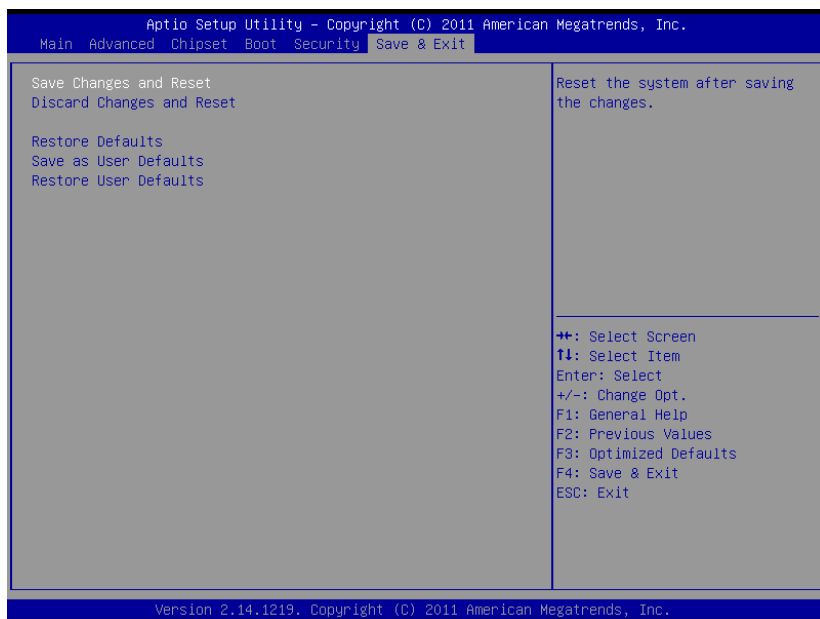
Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.					
Main Advanced Chipset Boot Security Save & Exit					
<p>Password Description</p> <p>If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.</p> <p>If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.</p> <p>The password length must be in the following range:</p> <table> <tr> <td>Minimum length</td> <td>3</td> </tr> <tr> <td>Maximum length</td> <td>20</td> </tr> </table> <p>Administrator Password</p> <p>User Password</p> <p>HDD Security Configuration:</p> <p>HDD0:WDC WD1600BU</p>	Minimum length	3	Maximum length	20	<p>Set Administrator Password</p> <hr/> <p>++: Select Screen            F1: Select Item            Enter: Select            +/-: Change Opt.            F1: General Help            F2: Previous Values            F3: Optimized Defaults            F4: Save &amp; Exit            ESC: Exit</p>
Minimum length	3				
Maximum length	20				

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If you highlight these items and press Enter, a dialog box appears which lets you enter a password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press Enter after you have retyped it correctly. The password is required at boot time, or when the user enters the Setup utility.



## Setup submenu: Exit



Chapter

**4**

**Driver  
Installation**

The AIS-E2 comes with an AutoRun DVD-ROM that contains all drivers and utilities that can help you to install the driver automatically.

Insert the driver DVD, the driver DVD-title will auto start and show the installation guide. If not, please follow the sequence below to install the drivers.

***Follow the sequence below to install the drivers:***

Step 1 – Install Chipset Driver

Step 2.1 – Install Display Audio Driver

Step 2.2 – Install VGA Driver

Step 3 – Install LAN Driver

Step 4 – Install Audio Driver

Step 5 – Install USB3.0 Driver

Step 6 – Install RAID & AHCI Driver

Step 7 – Install ME Driver

Step 8 – Install Serial Port Driver (Optional)

**Note:** If you got compatible issue for COM port, please find its driver under STEP 8 folder and then install it by administrative login permission.

Please read instructions below for further detailed installations.

## 4.1 Installation:

---

Insert the AIS-E2 DVD-ROM into the DVD-ROM drive. And install the drivers from Step 1 to Step 8 in order.

### Step 1 – Install Chipset Driver

1. Click on the **Step 1 - Chipset** folder and double click on the ***infinst\_autol.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

### Step 2.1 – Install Display Audio Driver

1. Click on the **Step 2.1 -Display Audio Driver Patch (for WinXP 64bit SP1 only)** folder double click on the ***WindowsServer2003.WindowsXP-KB901105-v3-x64-ENU*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

### Step 2.2 –Install VGA Driver

1. Click on the **Step 2.2 - VGA** folder and select the OS folder your system is
2. Double click on the ***Setup.exe*** located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

### Step 3 –Install LAN Driver

1. Click on the **Step 3 - LAN** folder and select the folder of LAN chip (**Intel or Realtek**) based on the system adopted.
2. Select the OS folder your system is and double click on the **.exe** file located each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

### Step 4 –Install Audio Driver

5. Click on the **Step 4 - Audio** folder and select the OS folder your system is
6. Double click on the **.exe** located in each OS folder
7. Follow the instructions that the window shows
8. The system will help you install the driver automatically

### Step 5 – Install USB3.0 Driver

1. Click on the **Step 5 - USB3.0** folder and double click on the **Setup.exe**
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

### Step 6 – Install RAID & AHCI Driver

Please refer to the **Appendix C RAID & AHCI Settings**

### Step 7 – Install ME Driver

1. Click on the **Step 7 - ME** folder and double click on the **setup.exe** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

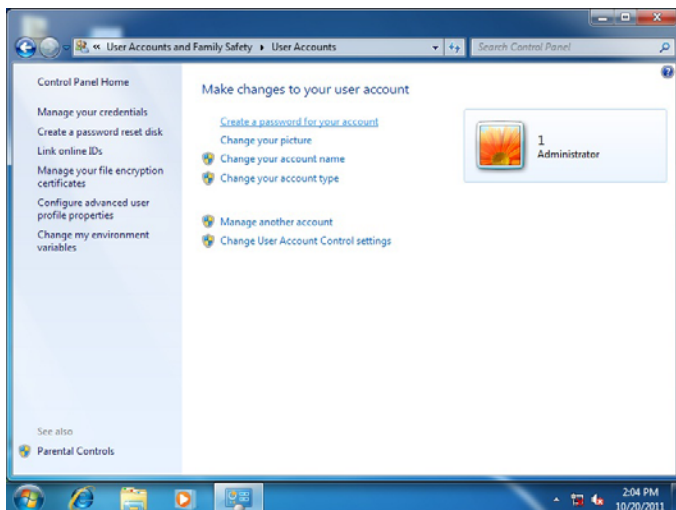
### Step 8 –Install Serial Port Driver (Optional)

#### **For Windows® XP 32-bit**

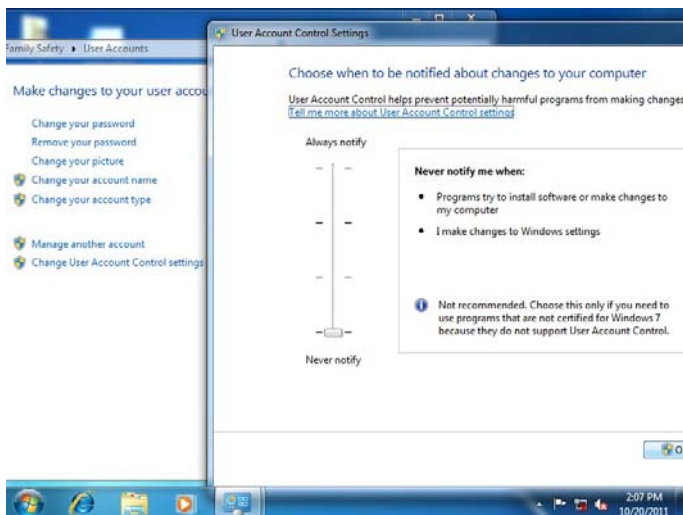
1. Click on the **Step 8 - Serial Port Driver (Optional)** folder and double click on the **patch.bat**
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

## For Windows® 7 32-bit/ 64-bit

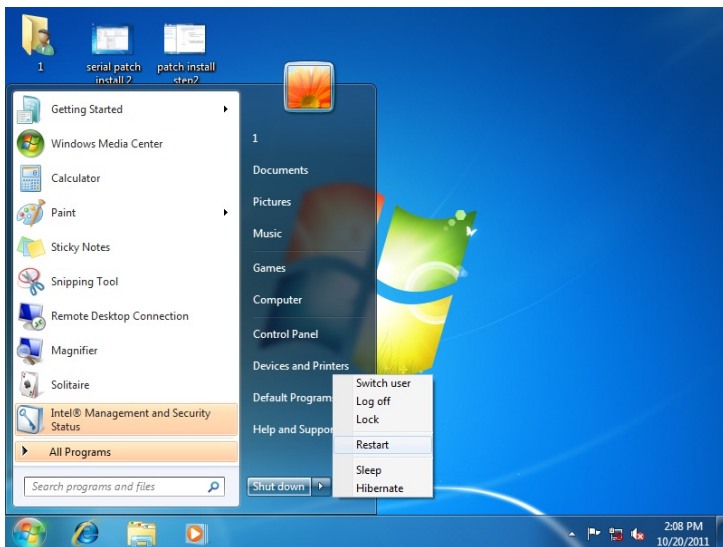
1. Create a password for Administrator account.



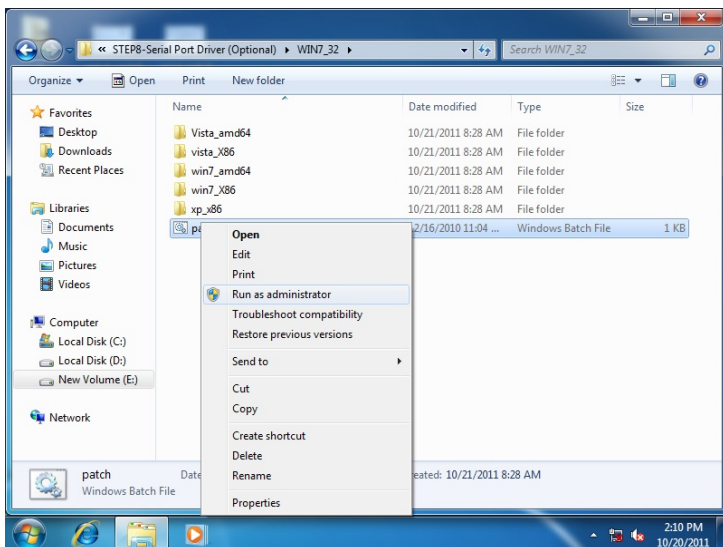
2. Change User Account Control Settings to [Never notify]



### 3. Reboot and Administrator login.



### 4. To run patch.bat with [Run as administrator].





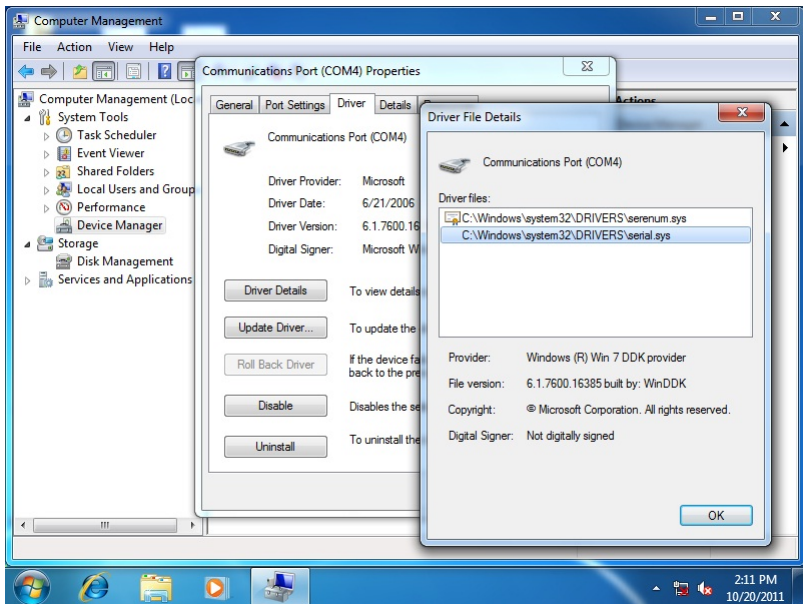
You also can install the serial port driver for Windows 7 by the Installation Procedure 2 below:

-Win7 32-bit

Copy the Driver CD\Serial Port Driver (Optional) \WIN7\_32\  
win7\_X86\serial.sys to C:\WINDOWS\system32\drivers\

-Win7 64-bit

Copy the Driver CD\Serial Port Driver (Optional) \WIN7\_64\  
win7\_amd64\serial.sys to C:\WINDOWS\system32\drivers\



Appendix

**A**

# **Programming the Watchdog Timer**

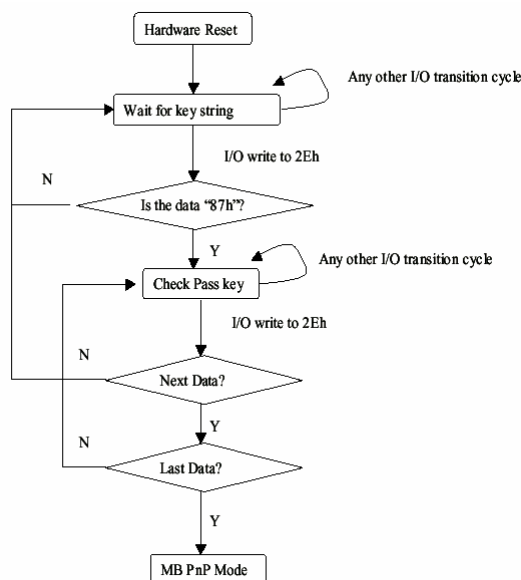
## A.1 Programming

AIS-E2 utilizes ITE IT8728 chipset as its watchdog timer controller.

Below are the procedures to complete its configuration and the AAEON initial watchdog timer program is also attached based on which you can develop customized program to fit your application.

### Configuring Sequence Description

After the hardware reset or power-on reset, the ITE 8728 enters the normal mode with all logical devices disabled except KBC. The initial state (enable bit) of this logical device (KBC) is determined by the state of pin 121 (DTR1#) at the falling edge of the system reset during power-on reset.



There are three steps to complete the configuration setup: (1) Enter the MB PnP Mode; (2) Modify the data of configuration registers; (3) Exit the MB PnP Mode. Undesired result may occur if the MB PnP Mode is not exited normally.

### **(1) Enter the MB PnP Mode**

To enter the MB PnP Mode, four special I/O write operations are to be performed during Wait for Key state. To ensure the initial state of the key-check logic, it is necessary to perform four write operations to the Special Address port (2EH). Two different enter keys are provided to select configuration ports (2Eh/2Fh) of the next step.

	<b>Address Port</b>	<b>Data Port</b>
87h, 01h, 55h, 55h:	2Eh	2Fh

### **(2) Modify the Data of the Registers**

All configuration registers can be accessed after entering the MB PnP Mode. Before accessing a selected register, the content of Index 07h must be changed to the LDN to which the register belongs, except some Global registers.

### **(3) Exit the MB PnP Mode**

Set bit 1 of the configure control register (Index=02h) to 1 to exit the MB PnP Mode.

**WatchDog Timer Configuration Registers**

<b>LDN Index R/W Reset Configuration Register or Action</b>				
All	02H	W	N/A	Configure Control
07H	71H	R/W	00H	WatchDog Timer Control Register
07H	72H	R/W	00H	WatchDog Timer Configuration Register
07H	73H	R/W	00H	WatchDog Timer Time-out Value Register

**Configure Control (Index=02h)**

This register is write only. Its values are not sticky; that is to say, a hardware reset will automatically clear the bits, and does not require the software to clear them.

<b>Bit</b>	<b>Description</b>
7-2	Reserved
1	Returns to the Wait for Key state. This bit is used when the configuration sequence is completed
0	Resets all logical devices and restores configuration registers to their power-on states.

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

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

**WatchDog Timer Configuration Register (Index=72h,  
Default=00h)**

<b>Bit</b>	<b>Description</b>
7	WDT Time-out value select
	1: Second
	0: Minute
6	WDT output through KRST (pulse) enable
5-4	Reserved
3-0	Select the interrupt level <sup>Note</sup> for WDT

**WatchDog Timer Time-out Value Register (Index=73h,  
Default=00h)**

<b>Bit</b>	<b>Description</b>
7-0	WDT Time-out value 7-0

## **A.2 ITE8728 Watchdog Timer Initial Program**

---

.MODEL SMALL

.CODE

Main:

CALL Enter\_Configuration\_mode

CALL Check\_Chip

mov cl, 7

call Set\_Logic\_Device

;time setting

mov cl, 10 ; 10 Sec

dec al

Watch\_Dog\_Setting:

;Timer setting

mov al, cl

mov cl, 73h

call Superio\_Set\_Reg

;Clear by keyboard or mouse interrupt

mov al, 0f0h

mov cl, 71h

call Superio\_Set\_Reg

;unit is second.

mov al, 0C0H

mov cl, 72h

call Superio\_Set\_Reg

```
; game port enable  
mov cl, 9  
call Set_Logic_Device
```

```
Initial_OK:  
CALL Exit_Configuration_mode  
MOV AH,4Ch  
INT 21h
```

```
Enter_Configuration_Mode PROC NEAR  
MOV SI,WORD PTR CS:[Offset Cfg_Port]
```

```
MOV DX,02Eh  
MOV CX,04h  
Init_1:  
MOV AL,BYTE PTR CS:[SI]  
OUT DX,AL  
INC SI  
LOOP Init_1  
RET  
Enter_Configuration_Mode ENDP
```

```
Exit_Configuration_Mode PROC NEAR  
MOV AX,0202h  
CALL Write_Configuration_Data
```



RET

Exit\_Configuration\_Mode ENDP

Check\_Chip PROC NEAR

MOV AL,20h

CALL Read\_Configuration\_Data

CMP AL,87h

JNE Not\_Initial

MOV AL,21h

CALL Read\_Configuration\_Data

CMP AL,12h

JNE Not\_Initial

Need\_Initial:

STC

RET

Not\_Initial:

CLC

RET

Check\_Chip ENDP

Read\_Configuration\_Data PROC NEAR

MOV DX,WORD PTR CS:[Cfg\_Port+04h]

OUT DX,AL

```
MOV DX,WORD PTR CS:[Cfg_Port+06h]
IN AL,DX
RET
Read_Configuration_Data ENDP
```

```
Write_Configuration_Data PROC NEAR
MOV DX,WORD PTR CS:[Cfg_Port+04h]
OUT DX,AL
XCHG AL,AH
MOV DX,WORD PTR CS:[Cfg_Port+06h]
OUT DX,AL
RET
Write_Configuration_Data ENDP
```

```
Superio_Set_Reg proc near
push ax
MOV DX,WORD PTR CS:[Cfg_Port+04h]
mov al,cl
out dx,al
pop ax
inc dx
out dx,al
ret
Superio_Set_Reg endp.Set_Logic_Device proc near
Set_Logic_Device  proc  near
```

```
push ax
push cx
xchg al,cl
mov cl,07h
call Superio_Set_Reg
pop cx
pop ax
ret
Set_Logic_Device endp
```

```
;Select 02Eh->Index Port, 02Fh->Data Port
Cfg_Port DB 087h,001h,055h,055h
```

```
DW 02Eh,02Fh
```

## **END Main**

*Note: Interrupt level mapping*

0Fh-Dh: not valid

0Ch: IRQ12

.

.

03h: IRQ3

02h: not valid

01h: IRQ1

00h: no interrupt selected







































Appendix

**B**

**I/O Information**

## B.1 I/O Address Map














































Input/output (I/O)	
[00000000 - 0000001F]	Direct memory access controller
[00000000 - 000000CF]	PCI bus
[00000010 - 0000001F]	Motherboard resources
[00000020 - 00000021]	Programmable interrupt controller
[00000022 - 0000003F]	Motherboard resources
[00000024 - 00000025]	Programmable interrupt controller
[00000028 - 00000029]	Programmable interrupt controller
[0000002C - 0000002D]	Programmable interrupt controller
[0000002E - 0000002F]	Motherboard resources
[00000030 - 00000031]	Programmable interrupt controller
[00000034 - 00000035]	Programmable interrupt controller
[00000038 - 00000039]	Programmable interrupt controller
[0000003C - 0000003D]	Programmable interrupt controller
[00000040 - 00000043]	System timer
[00000044 - 0000005F]	Motherboard resources
[0000004E - 0000004F]	Motherboard resources
[00000050 - 00000053]	System timer
[00000060 - 00000060]	Standard PS/2 Keyboard
[00000061 - 00000061]	Motherboard resources
[00000062 - 00000063]	Motherboard resources
[00000063 - 00000063]	Motherboard resources
[00000064 - 00000064]	Standard PS/2 Keyboard
[00000065 - 00000065]	Motherboard resources
[00000065 - 0000006F]	Motherboard resources
[00000067 - 00000067]	Motherboard resources
[00000070 - 00000070]	Motherboard resources
[00000070 - 00000077]	System CMOS/real time clock
[00000072 - 0000007F]	Motherboard resources
[00000080 - 00000080]	Motherboard resources
[00000080 - 00000080]	Motherboard resources
[00000081 - 00000091]	Direct memory access controller
[00000084 - 00000086]	Motherboard resources
[00000088 - 00000088]	Motherboard resources
[0000008C - 0000008E]	Motherboard resources
[00000090 - 0000009F]	Motherboard resources
[00000092 - 00000092]	Motherboard resources
[00000093 - 0000009F]	Direct memory access controller
[000000A0 - 000000A1]	Programmable interrupt controller
[000000A2 - 000000BF]	Motherboard resources
[000000A4 - 000000A5]	Programmable interrupt controller
[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
	[00000200 - 0000020F] Motherboard resources
	[000002F8 - 000002FF] Communications Port (COM2)
	[000003B0 - 000003BB] Intel(R) HD Graphics 4000
	[000003C0 - 000003DF] Intel(R) HD Graphics 4000
	[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
	[00000A00 - 00000A1F] Motherboard resources
	[00000A20 - 00000A2F] Motherboard resources
	[00000A30 - 00000A3F] Motherboard resources
	[00000D00 - 0000FFFF] PCI bus
	[0000164E - 0000164F] Motherboard resources
	[0000E000 - 0000E0FF] Realtek PCIe GBE Family Controller
	[0000E000 - 0000EFFF] Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12
	[0000F000 - 0000F03F] Intel(R) HD Graphics 4000
	[0000F040 - 0000F05F] Intel(R) 7 Series/C216 Chipset Family SMBus Host Controller - 1E22
	[0000F060 - 0000F07F] Intel(R) 7 Series/C216 Chipset Family SATA AHCI Controller - 1E03
	[0000F0A0 - 0000F0A3] Intel(R) 7 Series/C216 Chipset Family SATA AHCI Controller - 1E03
	[0000F0B0 - 0000F0B7] Intel(R) 7 Series/C216 Chipset Family SATA AHCI Controller - 1E03
	[0000F0C0 - 0000F0C3] Intel(R) 7 Series/C216 Chipset Family SATA AHCI Controller - 1E03
	[0000F0D0 - 0000F0D7] Intel(R) 7 Series/C216 Chipset Family SATA AHCI Controller - 1E03
	[0000F0E0 - 0000F0E7] Intel(R) Active Management Technology - SOL (COM5)
	[0000FFFF - 0000FFFF] Motherboard resources
	[0000FFFF - 0000FFFF] Motherboard resources


























































## B.2 Memory Address Map


Memory	
[000A0000 - 000BFFFF]	Intel(R) HD Graphics 4000
[000A0000 - 000BFFFF]	PCI bus
[000D0000 - 000D3FFF]	PCI bus
[000D4000 - 000D7FFF]	PCI bus
[000D8000 - 000DBFFF]	PCI bus
[000DC000 - 000DFFFF]	PCI bus
[000E0000 - 000E3FFF]	PCI bus
[000E4000 - 000E7FFF]	PCI bus
[20000000 - 201FFFFFF]	System board
[3DA00000 - 3DA00FFF]	Motherboard resources
[3DA00000 - FEAF0000]	PCI bus
[40004000 - 40004FFF]	System board
[E0000000 - EFFFFFFF]	Intel(R) HD Graphics 4000
[F0000000 - F003FFFF]	Realtek PCIe GBE Family Controller
[F0000000 - F00FFFFFF]	Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12
[F7800000 - F7BFFFFF]	Intel(R) HD Graphics 4000
[F7C00000 - F7C00FFF]	Realtek PCIe GBE Family Controller
[F7C00000 - F7CFFFFF]	Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12
[F7D00000 - F7D1FFFF]	Intel(R) 82579LM Gigabit Network Connection
[F7D20000 - F7D2FFFF]	Intel(R) USB 3.0 eXtensible Host Controller
[F7D30000 - F7D33FFF]	High Definition Audio Controller
[F7D35000 - F7D350FF]	Intel(R) 7 Series/C216 Chipset Family SMBus Host Controller - 1E22
[F7D36000 - F7D367FF]	Intel(R) 7 Series/C216 Chipset Family SATA AHCI Controller - 1E03
[F7D37000 - F7D373FF]	Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E26
[F7D38000 - F7D383FF]	Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E2D
[F7D39000 - F7D39FFF]	Intel(R) 82579LM Gigabit Network Connection
[F7D3A000 - F7D3AFFF]	Intel(R) Active Management Technology - SOL (COM5)
[F7D3C000 - F7D3C00F]	Intel(R) Management Engine Interface
[F8000000 - FBFFFFFF]	Motherboard resources
[FED00000 - FED003FF]	High precision event timer
[FED10000 - FED17FFF]	Motherboard resources
[FED18000 - FED18FFF]	Motherboard resources
[FED19000 - FED19FFF]	Motherboard resources
[FED1C000 - FED1FFFF]	Motherboard resources
[FED20000 - FED3FFFF]	Motherboard resources
[FED40000 - FED44FFF]	System board
[FED45000 - FED8FFFF]	Motherboard resources
[FED90000 - FED93FFF]	Motherboard resources
[FEE00000 - FEEFFFFFF]	Motherboard resources
[FF000000 - FFFFFFFF]	Intel(R) 82802 Firmware Hub Device
[FF000000 - FFFFFFFF]	Motherboard resources

## B.3 IRQ Mapping Chart



Interrupt request (IRQ)		
	(ISA) 0x00000000 (00)	System timer
	(ISA) 0x00000001 (01)	Standard PS/2 Keyboard
	(ISA) 0x00000003 (03)	Communications Port (COM2)
	(ISA) 0x00000004 (04)	Communications Port (COM1)
	(ISA) 0x00000008 (08)	System CMOS/real time clock
	(ISA) 0x0000000C (12)	Microsoft PS/2 Mouse
	(ISA) 0x0000000D (13)	Numeric data processor
	(ISA) 0x00000051 (81)	Microsoft ACPI-Compliant System
	(ISA) 0x00000052 (82)	Microsoft ACPI-Compliant System
	(ISA) 0x00000053 (83)	Microsoft ACPI-Compliant System
	(ISA) 0x00000054 (84)	Microsoft ACPI-Compliant System
	(ISA) 0x00000055 (85)	Microsoft ACPI-Compliant System
	(ISA) 0x00000056 (86)	Microsoft ACPI-Compliant System
	(ISA) 0x00000057 (87)	Microsoft ACPI-Compliant System
	(ISA) 0x00000058 (88)	Microsoft ACPI-Compliant System
	(ISA) 0x00000059 (89)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005A (90)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005B (91)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005C (92)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005D (93)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005E (94)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005F (95)	Microsoft ACPI-Compliant System
	(ISA) 0x00000060 (96)	Microsoft ACPI-Compliant System
	(ISA) 0x00000061 (97)	Microsoft ACPI-Compliant System
	(ISA) 0x00000062 (98)	Microsoft ACPI-Compliant System
	(ISA) 0x00000063 (99)	Microsoft ACPI-Compliant System
	(ISA) 0x00000064 (100)	Microsoft ACPI-Compliant System
	(ISA) 0x00000065 (101)	Microsoft ACPI-Compliant System
	(ISA) 0x00000066 (102)	Microsoft ACPI-Compliant System
	(ISA) 0x00000067 (103)	Microsoft ACPI-Compliant System
	(ISA) 0x00000068 (104)	Microsoft ACPI-Compliant System
	(ISA) 0x00000069 (105)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006A (106)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006B (107)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006C (108)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006D (109)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006E (110)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006F (111)	Microsoft ACPI-Compliant System
	(ISA) 0x00000070 (112)	Microsoft ACPI-Compliant System
	(ISA) 0x00000071 (113)	Microsoft ACPI-Compliant System
	(ISA) 0x00000072 (114)	Microsoft ACPI-Compliant System
	(ISA) 0x00000073 (115)	Microsoft ACPI-Compliant System
	(ISA) 0x00000074 (116)	Microsoft ACPI-Compliant System
	(ISA) 0x00000075 (117)	Microsoft ACPI-Compliant System
	(ISA) 0x00000076 (118)	Microsoft ACPI-Compliant System



	(ISA) 0x00000077 (119)	Microsoft ACPI-Compliant System
	(ISA) 0x00000078 (120)	Microsoft ACPI-Compliant System
	(ISA) 0x00000079 (121)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007A (122)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007B (123)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007C (124)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007D (125)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007E (126)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007F (127)	Microsoft ACPI-Compliant System
	(ISA) 0x00000080 (128)	Microsoft ACPI-Compliant System
	(ISA) 0x00000081 (129)	Microsoft ACPI-Compliant System
	(ISA) 0x00000082 (130)	Microsoft ACPI-Compliant System
	(ISA) 0x00000083 (131)	Microsoft ACPI-Compliant System
	(ISA) 0x00000084 (132)	Microsoft ACPI-Compliant System
	(ISA) 0x00000085 (133)	Microsoft ACPI-Compliant System
	(ISA) 0x00000086 (134)	Microsoft ACPI-Compliant System
	(ISA) 0x00000087 (135)	Microsoft ACPI-Compliant System
	(ISA) 0x00000088 (136)	Microsoft ACPI-Compliant System
	(ISA) 0x00000089 (137)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008A (138)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008B (139)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008C (140)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008D (141)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008E (142)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008F (143)	Microsoft ACPI-Compliant System
	(ISA) 0x00000090 (144)	Microsoft ACPI-Compliant System
	(ISA) 0x00000091 (145)	Microsoft ACPI-Compliant System
	(ISA) 0x00000092 (146)	Microsoft ACPI-Compliant System
	(ISA) 0x00000093 (147)	Microsoft ACPI-Compliant System
	(ISA) 0x00000094 (148)	Microsoft ACPI-Compliant System
	(ISA) 0x00000095 (149)	Microsoft ACPI-Compliant System
	(ISA) 0x00000096 (150)	Microsoft ACPI-Compliant System
	(ISA) 0x00000097 (151)	Microsoft ACPI-Compliant System
	(ISA) 0x00000098 (152)	Microsoft ACPI-Compliant System
	(ISA) 0x00000099 (153)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009A (154)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009B (155)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009C (156)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009D (157)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009E (158)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009F (159)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A0 (160)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A1 (161)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A2 (162)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A3 (163)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A4 (164)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A5 (165)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A6 (166)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A7 (167)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A8 (168)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A9 (169)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AA (170)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AB (171)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AC (172)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AD (173)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AE (174)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AF (175)	Microsoft ACPI-Compliant System

	(ISA) 0x000000B0 (176)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B1 (177)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B2 (178)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B3 (179)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B4 (180)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B5 (181)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B6 (182)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B7 (183)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B8 (184)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B9 (185)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BA (186)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BB (187)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BC (188)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BD (189)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BE (190)	Microsoft ACPI-Compliant System
	(PCI) 0x0000000B (11)	Intel(R) 7 Series/C216 Chipset Family SMBus Host Controller - 1E22
	(PCI) 0x00000010 (16)	Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E2D
	(PCI) 0x00000010 (16)	Intel(R) Management Engine Interface
	(PCI) 0x00000013 (19)	Intel(R) 7 Series/C216 Chipset Family SATA AHCI Controller - 1E03
	(PCI) 0x00000013 (19)	Intel(R) Active Management Technology - SOL (COM5)
	(PCI) 0x00000016 (22)	High Definition Audio Controller
	(PCI) 0x00000017 (23)	Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E26
	(PCI) 0xFFFFFFF9 (-7)	Realtek PCIe GBE Family Controller
	(PCI) 0xFFFFF9FA (-6)	Intel(R) 82579LM Gigabit Network Connection
	(PCI) 0xFFFFF9FB (-5)	Intel(R) USB 3.0 eXtensible Host Controller
	(PCI) 0xFFFFF9FC (-4)	Intel(R) HD Graphics 4000
	(PCI) 0xFFFFF9FD (-3)	Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12
	(PCI) 0xFFFFF9FE (-2)	Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 1 - 1E10

## B.4 DMA Channel Assignments

	Direct memory access (DMA)
	4 Direct memory access controller

Appendix

**C**

**RAID & AHCI  
Settings**

## C.1 Setting RAID

---

OS installation to setup RAID Mode

Step 1: Copy the files below from “**Driver CD ->Step 6 - RAID&AHCI**

->**WinXP\_32 or WinXP\_64**” to Disk

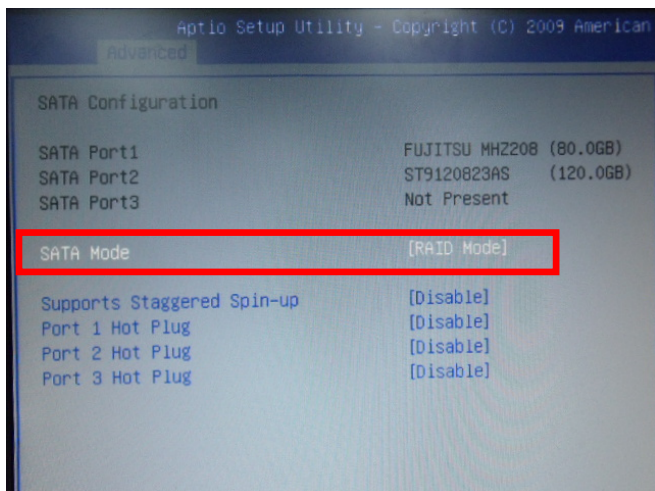


Step 2: Connect the USB Floppy (disk with RAID files) to the board



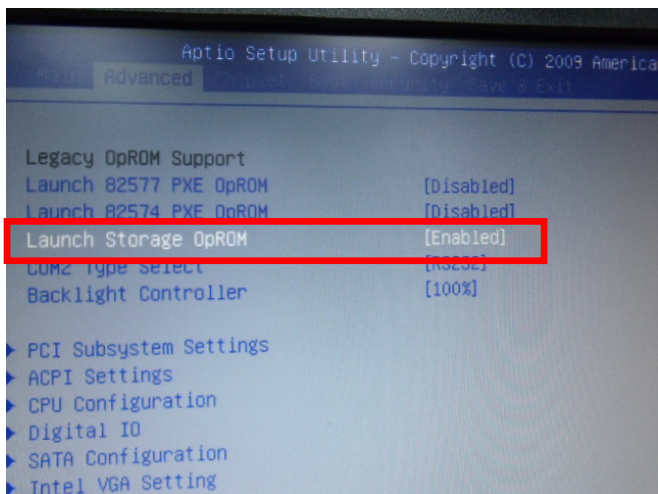
Step 3: The setting procedures “In BIOS Setup Menu”

**A: Advanced -> SATA Configuration -> SATA Mode -> RAID Mode**



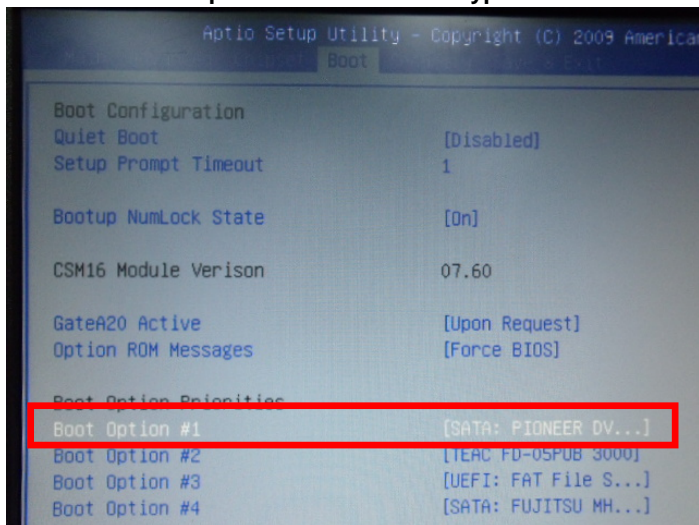
Step 4: The setting procedures “In BIOS Setup Menu”

**B: Advanced -> Launch Storage OpROM -> Enabled**



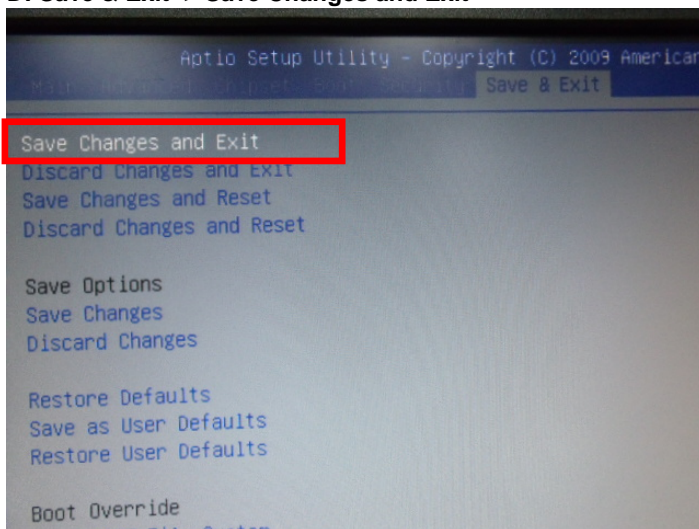
Step 5: The setting procedures "In BIOS Setup Menu"

**C: Boot -> Boot Option #1 -> DVD-ROM Type**



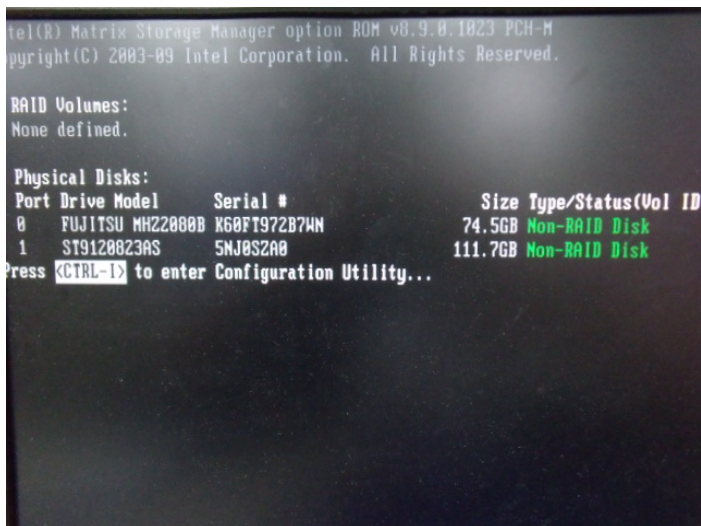
Step 6: The setting procedures "In BIOS Setup Menu"

**D: Save & Exit -> Save Changes and Exit**

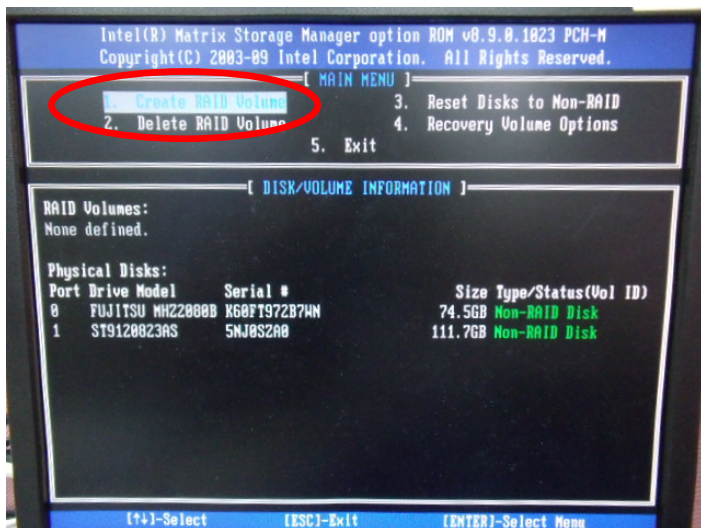




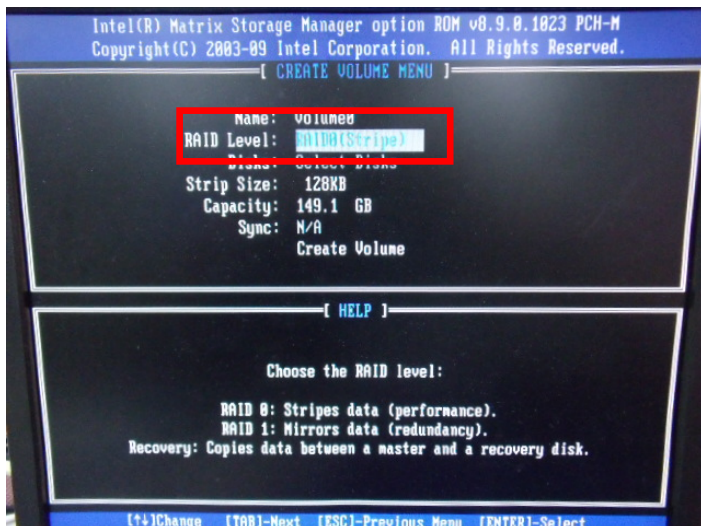
Step 7: Press **Ctrl-I** to enter **MAIN MENU**



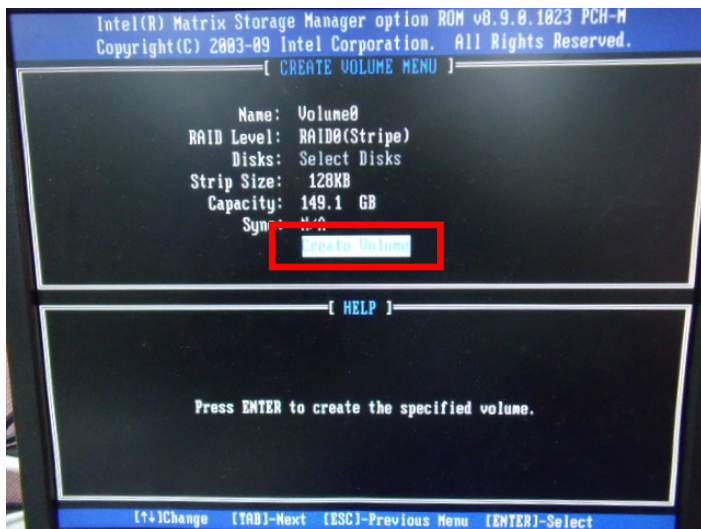
Step 8: Choose **"1.Create RAID Volume"**



Step 9: RAID Level -> RAID0(Stripe)



Step 10: Choose "Create Volume"

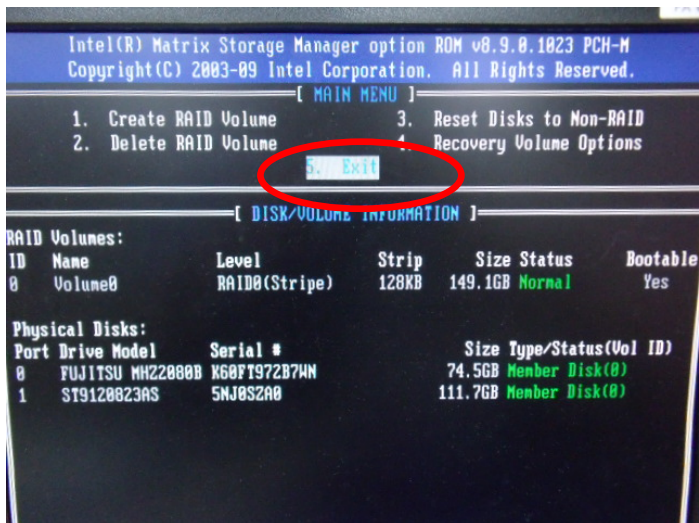




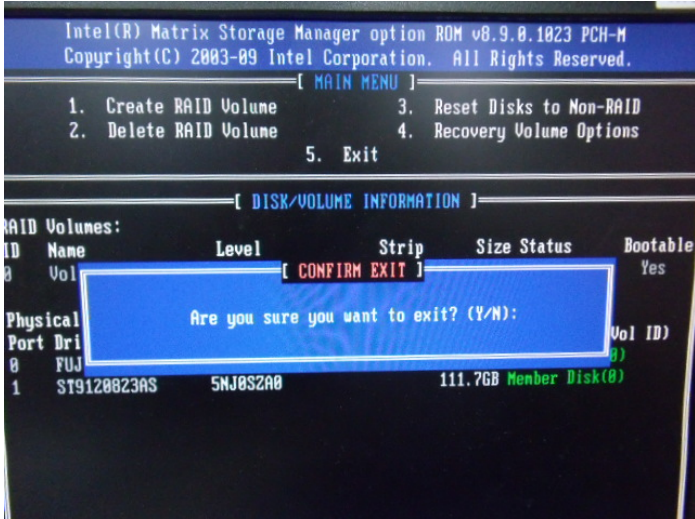
Step 11: Choose “Y”



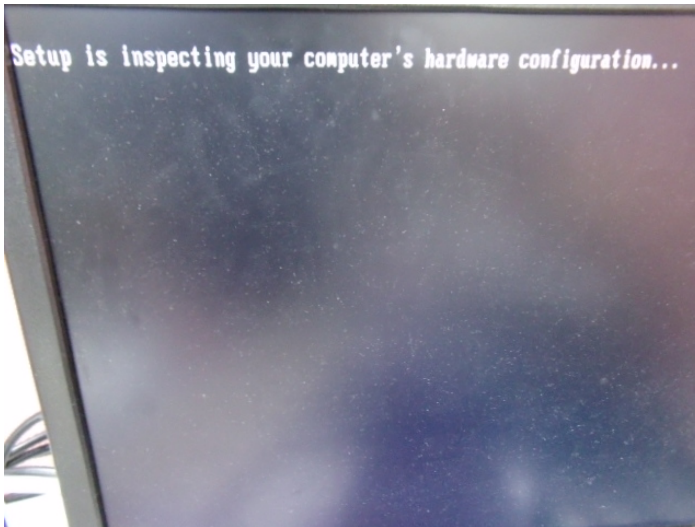
Step 12: Choose “5. Exit”



Step 13: Choose “Y”



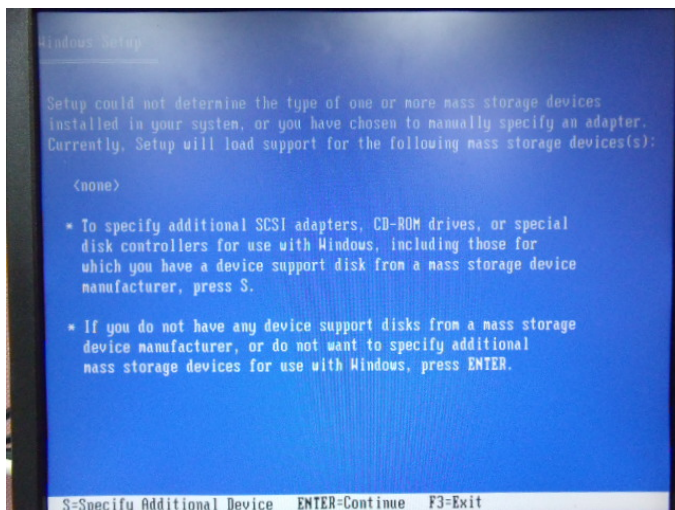
Step 14: Setup OS



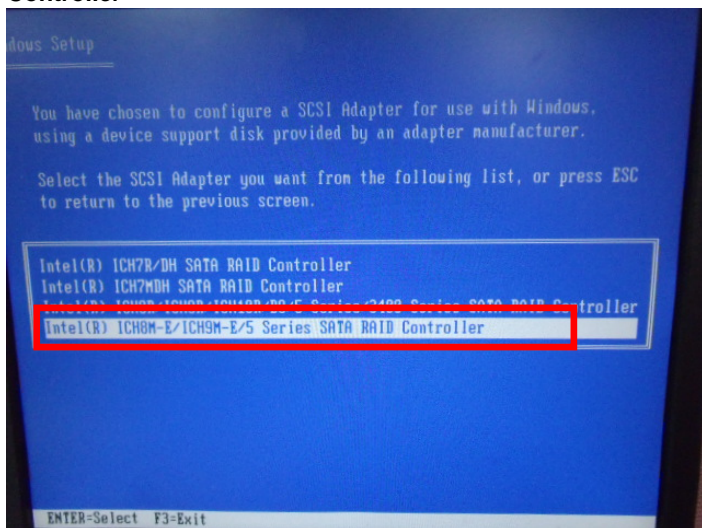
Step 15: Press “F6”



Step 16: Choose “S”



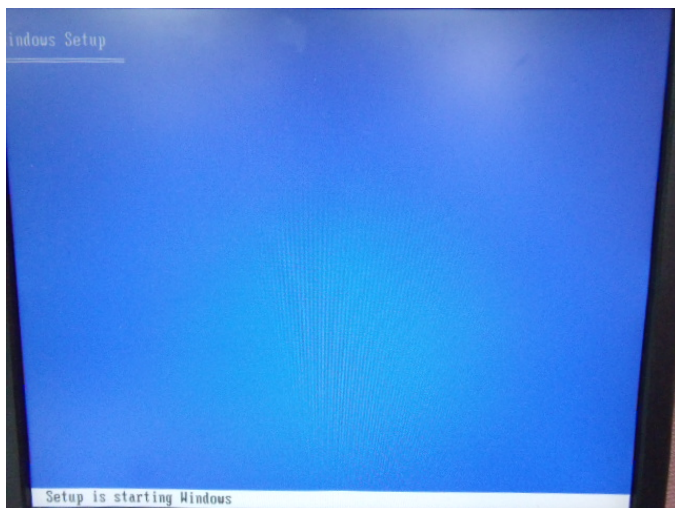
**Step 17: Choose “Intel(R) ICH8M-E/ICH9M-E/5 Series SATA RAID Controller”**



**Step 18: It will show the model number you select and then press “ENTER”**



Step 19: Setup is starting Windows





## C.2 Setting AHCI

---

OS installation to setup AHCI Mode

Step 1: Copy the files below from “**Driver CD -> Raid Driver -> F6 Floppy - x86**” to Disk

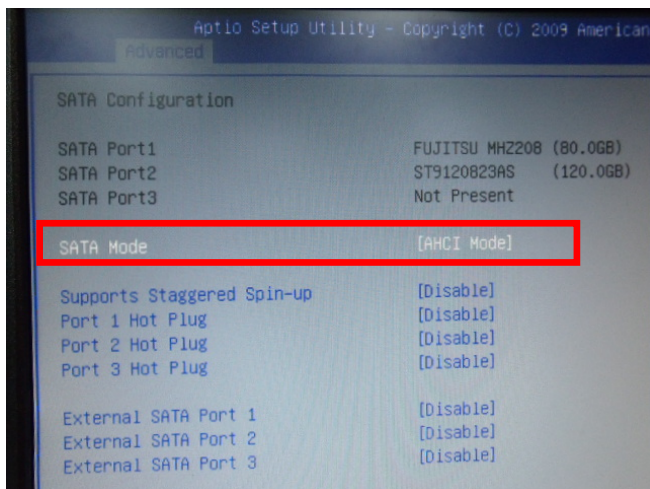


Step 2: Connect the USB Floppy (disk with RAID files) to the board



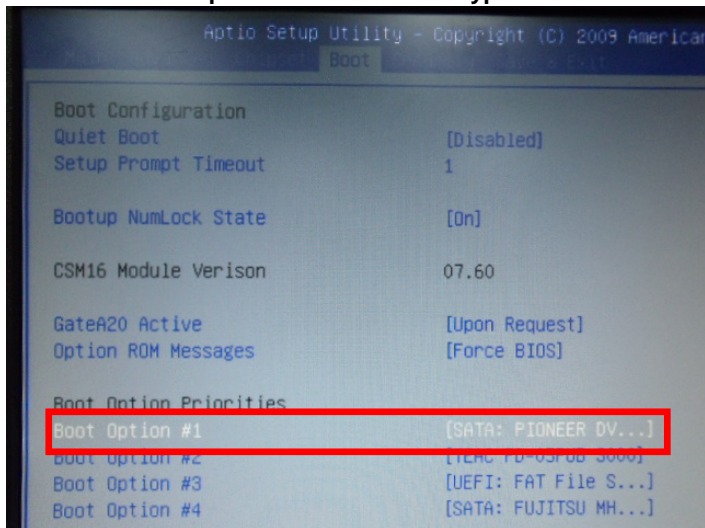
Step 3: The setting procedures “In BIOS Setup Menu”

**A: Advanced -> SATA Configuration -> SATA Configuration -> SATA Mode -> AHCI Mode**



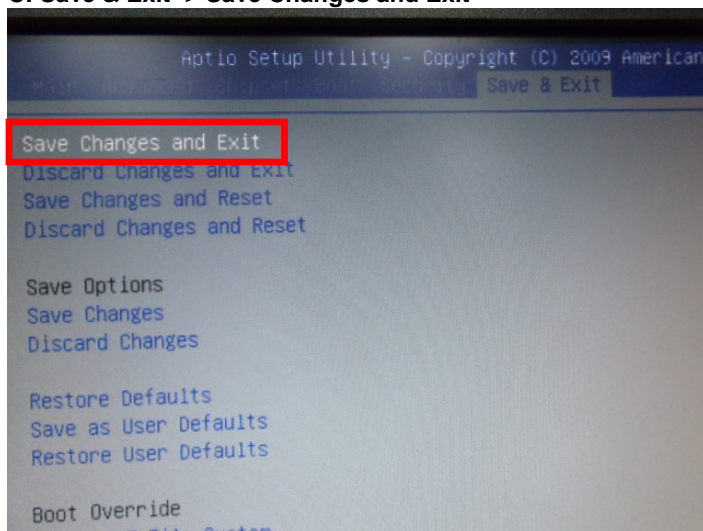
Step 4: The setting procedures “In BIOS Setup Menu”

**B: Boot -> Boot Option #1 -> DVD-ROM Type**

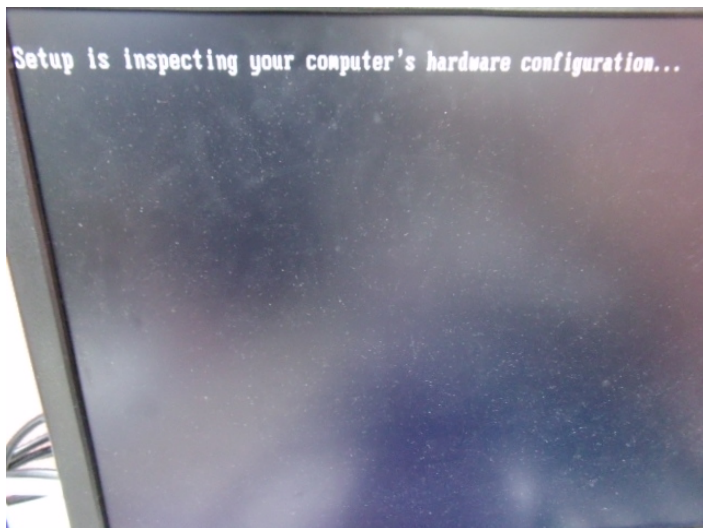


Step 5: The setting procedures “In BIOS Setup Menu”

**C: Save & Exit -> Save Changes and Exit**



Step 6: Setup OS

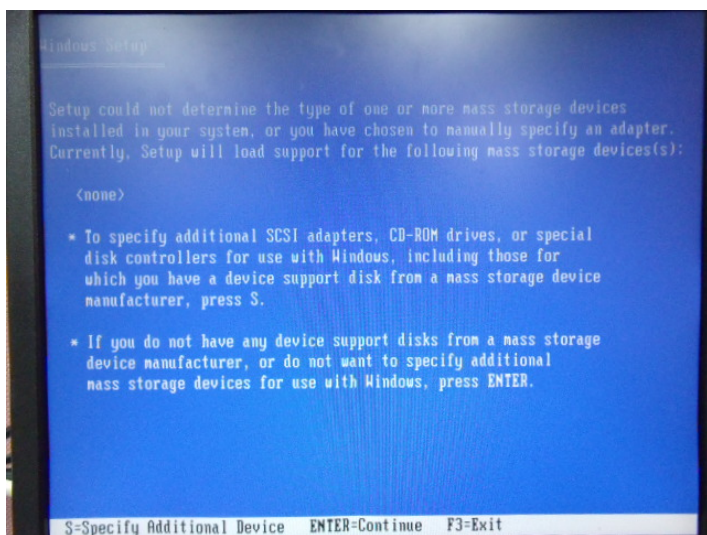




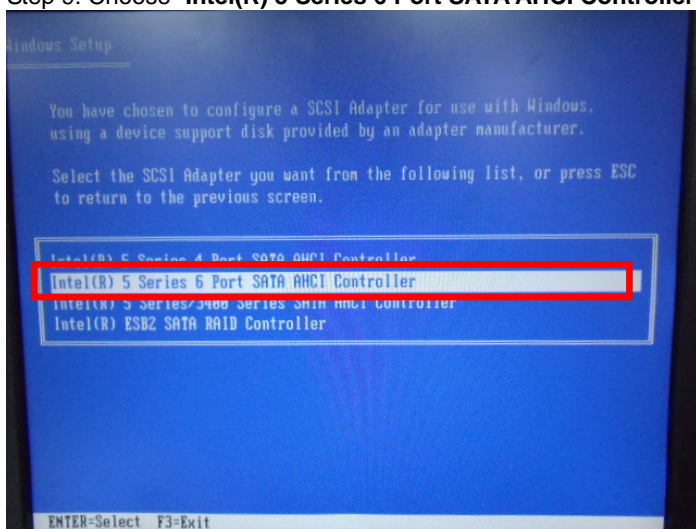
Step 7: Press "F6"



Step 8: Choose "S"



**Step 9: Choose “Intel(R) 5 Series 6 Port SATA AHCI Controller”**



**Step 10: It will show the model number you select and then press “ENTER”**



Step 11: Setup is loading files

