

# AEC-6877

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Fanless Embedded Box PC

User's Manual 3<sup>rd</sup> Ed

## Copyright Notice

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## Packing List

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Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
● BOXER-6877	1
● Phoenix power connector	1
● M3 x 4mm screws	4
● 6# -32 x 10mm screws	6
● Wall mount brackets	2
● Product DVD with User's Manual (in pdf) and drivers	1

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

## About this Document

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This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the [AAEON.com](http://AAEON.com) for the latest version of this document.

## Safety Precautions

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Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. All cables and adapters supplied by AAEON are certified and in accordance with the material safety laws and regulations of the country of sale. Do not use any cables or adapters not supplied by AAEON to prevent system malfunction or fires.
3. Make sure the power source matches the power rating of the device.
4. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
5. Always completely disconnect the power before working on the system's hardware.
6. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
7. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
8. Always disconnect this device from any AC supply before cleaning.
9. While cleaning, use a damp cloth instead of liquid or spray detergents.
10. Make sure the device is installed near a power outlet and is easily accessible.
11. Keep this device away from humidity.
12. Place the device on a solid surface during installation to prevent falls
13. Do not cover the openings on the device to ensure optimal heat dissipation.
14. Watch out for high temperatures when the system is running.
15. Do not touch the heat sink or heat spreader when the system is running
16. Never pour any liquid into the openings. This could cause fire or electric shock.

17. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
18. If any of the following situations arises, please contact our service personnel:
  - i. Damaged power cord or plug
  - ii. Liquid intrusion to the device
  - iii. Exposure to moisture
  - iv. Device is not working as expected or in a manner as described in this manual
  - v. The device is dropped or damaged
  - vi. Any obvious signs of damage displayed on the device
19. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

## FCC Statement

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### **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.*

### **Attention:**

*Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.*



China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON Embedded Box PC/ 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>○：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 SJ/T 11363-2006 标准规定的限量要求以下。</p> <p>X：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 SJ/T 11363-2006 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>						

China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products

AAEON Embedded Box PC/ Industrial System

Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	○	○	○	○	○	○
Wires & Connectors for External Connections	○	○	○	○	○	○
Chassis	○	○	○	○	○	○
CPU & RAM	○	○	○	○	○	○
Hard Disk	○	○	○	○	○	○
PSU	○	○	○	○	○	○
<p>O: The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.</p> <p>X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.</p> <p><b>Note:</b> The Environment Friendly Use Period as labeled on this product is applicable under normal usage only</p>						

## Table of Contents

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<b>Chapter 1 - Product Specifications.....</b>	<b>1</b>
1.1 Specifications.....	2
<b>Chapter 2 – Hardware Information .....</b>	<b>4</b>
2.1 Dimensions .....	5
2.2 List of Connectors .....	7
2.2.1 COM1 ~ COM2 TX / RX LED (CN2) .....	7
2.2.2 RS-232 Box Header (COM 1) .....	7
2.2.3 USB Box Header (USB1 ~ USB3) .....	8
2.3 CFast™ Card Installation .....	9
2.4 Hard Disk Drive (HDD) Installation .....	10
2.5 PCIe Card Installation .....	11
2.6 Wallmount Kit Installation .....	12
<b>Chapter 3 - AMI BIOS Setup.....</b>	<b>13</b>
3.1 System Test and Initialization .....	14
3.2 AMI BIOS Setup .....	15
3.3 Setup Submenu: Main.....	16
3.4 Setup Submenu: Advanced .....	17
3.4.1 Advanced: ACPI Settings.....	18
3.4.2 Advanced: Trusted Computing .....	19
3.4.3 Advanced: CPU Configuration.....	20
3.4.4 Advanced: SATA Configuration (IDE).....	21
3.4.5 Advanced: SATA Configuration (AHCI).....	22
3.4.6 Advanced: SATA Configuration (RAID).....	23
3.4.7 Advanced: Intel TXT (LT) Configuration .....	24
3.4.8 Advanced: PCH-FW Configuration.....	25
3.4.8.1 PCH-FW Configuration: Firmware Update	

Configuration .....	26
3.4.9 Advanced: AMT Configuration .....	27
3.4.10 Advanced: USB Configuration .....	28
3.4.11 Advanced: Super IO Configuration.....	29
3.4.11.1 Super IO Configuration: Serial Port 0 Configuration.	30
3.4.11.2 Super IO Configuration: Serial Port 1 Configuration.	31
3.4.12 Advanced: H/W Monitor .....	32
3.5 Setup submenu: Chipset.....	33
3.5.1 Chipset: PCH-IO Configuration .....	34
3.5.2 Chipset: System Agent (SA) Configuration .....	36
3.5.3 Chipset: Graphic Configuration .....	37
3.5.3.1 Graphic Configuration: Display Control .....	39
3.6 Setup submenu: Boot.....	40
3.6.1 Boot: Hard Drive BBS Priorities .....	41
3.7 Security .....	42
3.8 Setup submenu: Save & Exit.....	43
<b>Chapter 4 – Drivers Installation .....</b>	<b>44</b>
4.1 Product CD/DVD.....	45
<b>Appendix A - Watchdog Timer Programming.....</b>	<b>54</b>
A.1 Watchdog Timer Programming .....	55
A.2 ITE8728 Watchdog Timer Initial Program .....	58
<b>Appendix B - I/O Information.....</b>	<b>63</b>
B.1 I/O Address Map .....	64
B.2 Memory Address Map .....	66
B.3 IRQ Mapping Chart .....	67
B.4 DMA Channel Assignments .....	70
<b>Appendix C – RAID &amp; AHCI Settings .....</b>	<b>71</b>
C.1 Setting RAID .....	72

C.2	Setting AHCI.....	82
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# Chapter 1

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Product Specifications

## 1.1 Specifications

### System

● Processor		Intel® Core™ i7-3610QE 2.3 GHz
		Intel® Core™ i7-2710QE 2.1 GHz
		Intel® Core™ i5-2510E 2.5 GHz
		Intel® Celeron®-B810 1.6 GHz
● System Memory		204-pin dual-channel DDR3 SODIMM
		1066/1333/1600 MHz x 2, up to 16 GB
● Chipset		Intel® QM77
● Display	VGA	DB-15 x 1
	Interface	DVI
		DVI-D x 1, support 1920 x 1080 @ 60 Hz
● Storage		Others
		DisplayPort™ x 2
● Storage	SSD	CFast™ slot
	Device	HDD
● Network		SATA 6.0Gb/s x 2 support RAID 0, 1, 5, 10
	LAN	Gigabit Ethernet, RJ-45 x 2
	Wireless	Optional by MiniCard
● Front I/O	Serial Port	RS-232 x 1
	Others	Push Power button x 1
		Standard Antenna Hole x 2
● 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-out, Line-out
	KB/MS	PS/2 Keyboard x 1 + Mouse x 1
	Others	Power input x 1
● Expansion	PCIe	PCI-E[x4] x 1 (AxM series)
		or PCI x 2 (BxM series)
● Indicator	Front	Power LED x 1
		Hard Disk Drive active LED x 1

● Power Requirement	DC 9~30V with 3-pin terminal block
● System Cooling	Passive cooling
● Mounting	Wall mounted
● Dimension (W x H x D)	208 x 102 x 238 mm (8.19 x 4.02 x 9.37")
● Gross Weight	6 kg (13.2 lb)
● Certification	EMC
	Safety
● OS Support	Windows® 10 Windows® 7 Windows® XP Windows® XP Embedded Linux Fedora 10

## Environmental

● Operating Temperature	0 ~ 50°C (32 ~ 122°F) – with air flow
● Storage Temperature	-20 ~ 70°C (-4 ~ 158°F)
● Storage Humidity	10 ~ 95% @ 40°C, non-condensing
● Anti-Vibration	5 G <sub>rms</sub> /5~500 Hz/ operation- CFast™ 1 G <sub>rms</sub> /5~500 Hz/ operation- HDD
● Anti-Shock	20G peak acceleration (11 msec duration)- HDD

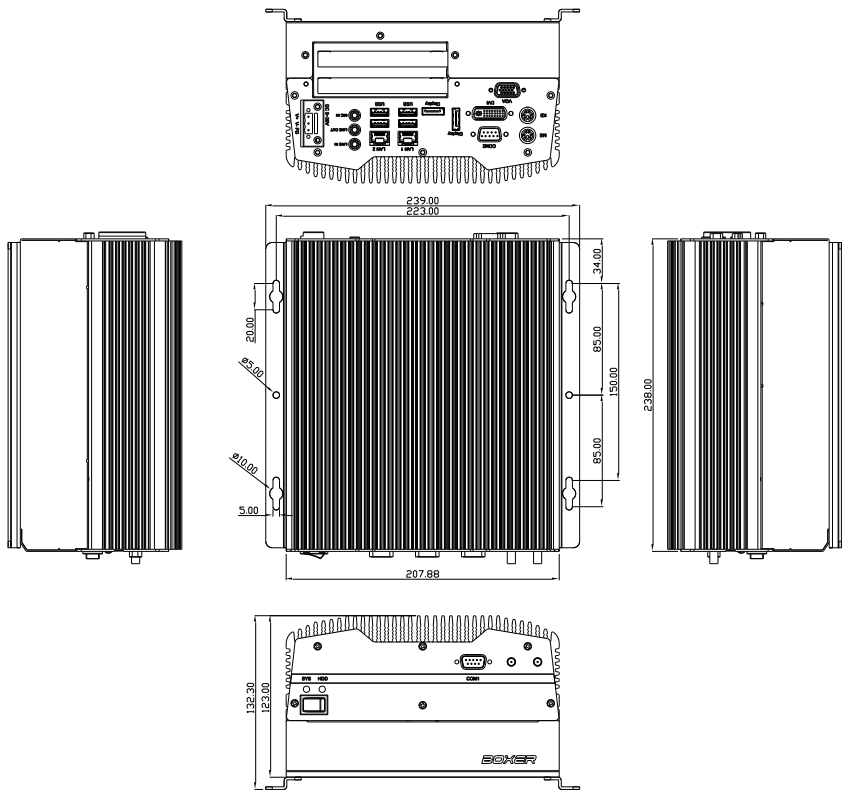


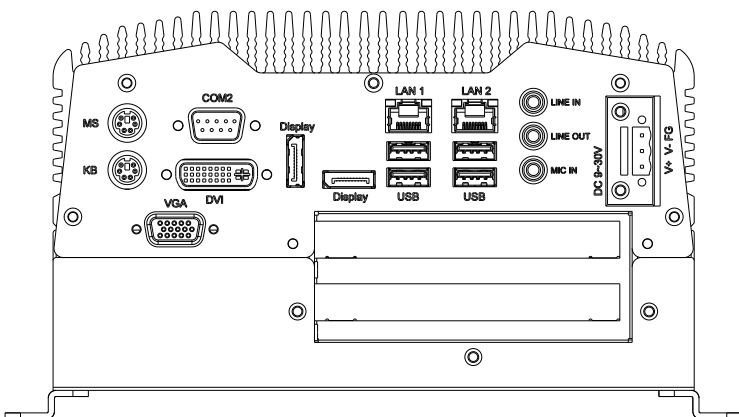
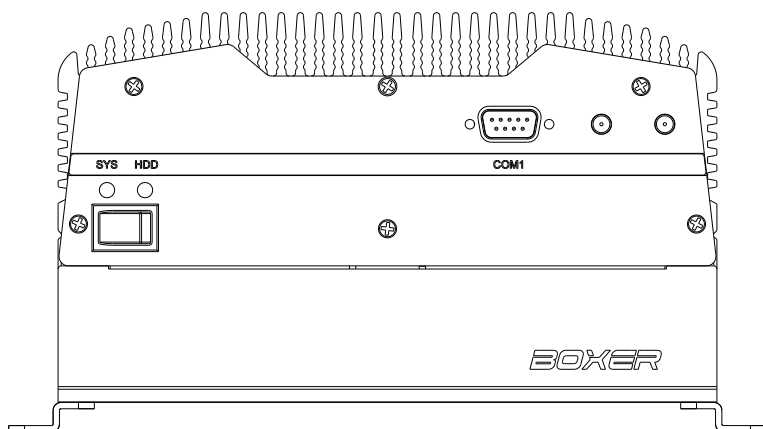
# Chapter 2

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Hardware Information

## 2.1 Dimensions





## 2.2 List of Connectors

Please refer to the table below for all of the system’s connectors that you can configure for your application

### 2.2.1 COM1 ~ COM2 TX / RX LED (CN2)

Pin	Signal	Pin	Signal
1	+5V	2	GND
3	TX_LED_COM1	4	-TX_LED_COM1
5	RX_LED_COM1	6	-RX_LED_COM1
7	COM2_RS232_PWR	8	GND
9	TX_LED_COM2	10	-TX_LED_COM2
11	RX_LED_COM2	12	-RX_LED_COM2
13	COM2_RS485_PWR	14	COM2_RS422_PWR

**Note:** The 115200 baud rate is not supported by the COM ports due to hardware limitation of the EMB-QM77 motherboard

### 2.2.2 RS-232 Box Header (COM 1)

Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C

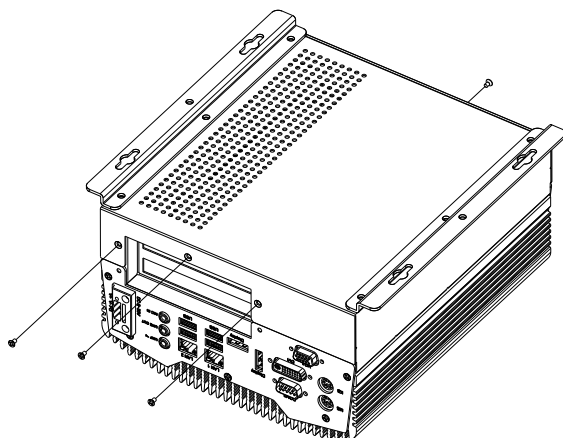
2.2.3 USB Box Header (USB1 ~ USB3)

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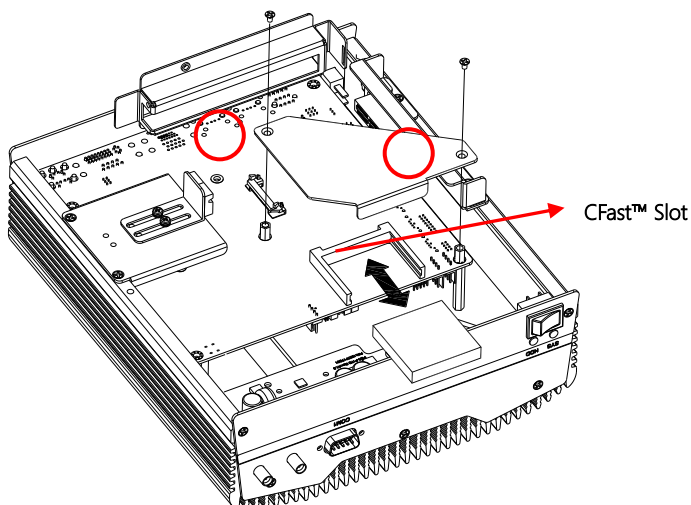
Pin	Signal	Pin	Signal
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C

## 2.3 CFast™ Card Installation

Step 1: Remove the screws on the front and rear panels

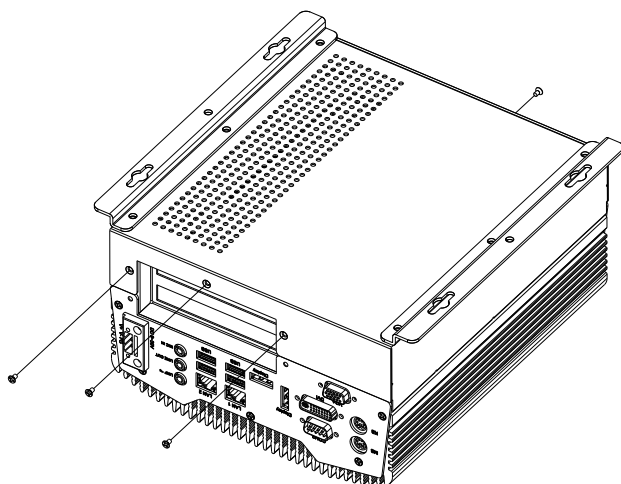


Step 2: Slot the CFast™ Card in to the CFast™ slot and secure the cover with screws

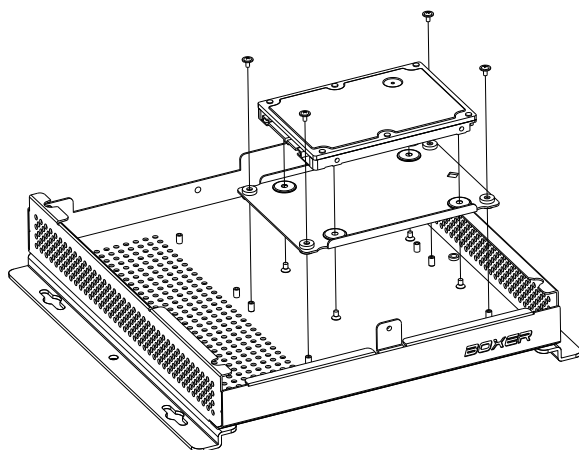


## 2.4 Hard Disk Drive (HDD) Installation

Step 1: Remove the four screws on the front and rear panels

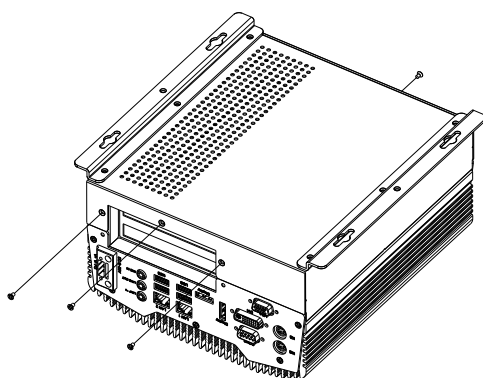


Step 2: Place the HDD onto the HDD bracket and attach it to the base of AEC-6877

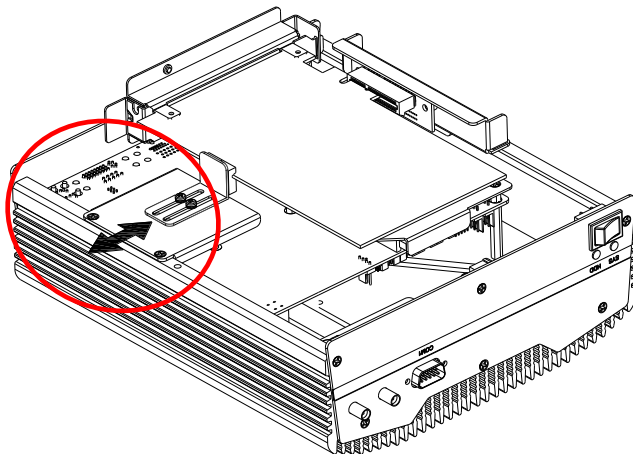


## 2.5 PCIe Card Installation

Step 1: Remove the screws on the front and rear panels



Step 2: Install a hold-down bracket to fix the PCI or PCIe Card and make sure the card is secured







# Chapter 3

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AMI BIOS Setup

## 3.1 System Test and Initialization

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The system uses certain routines to perform testing and initialization. If an error, fatal or non-fatal, is encountered, a few short beeps or an error message will be outputted. The board can usually continue the boot up sequence with non-fatal errors.

The system configuration verification routines check the current system configuration against the values stored in the CMOS memory. If they do not match, an error message will be outputted, in which case you will 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:

- You are starting your system for the first time
- You have changed your system's hardware
- The CMOS memory has lost power and the configuration information is erased

The system's CMOS memory uses a backup battery for data retention, which is to be replaced once emptied.

## 3.2 AMI BIOS Setup

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The AMI BIOS ROM has a pre-installed Setup program that allows users to modify basic system configurations, which is stored in the battery-backed CMOS RAM and BIOS NVRAM so that the information is retained when the power is turned off.

To enter BIOS Setup, press <Del> or <F2> immediately while your computer is powering up.

The function for each interface can be found below.

**Main** – Date and time can be set here. Press <Tab> to switch between date elements

**Advanced** – Enable/ Disable boot option for legacy network devices

**Chipset** – For hosting bridge parameters

**Boot** – Enable/ Disable quiet Boot Option

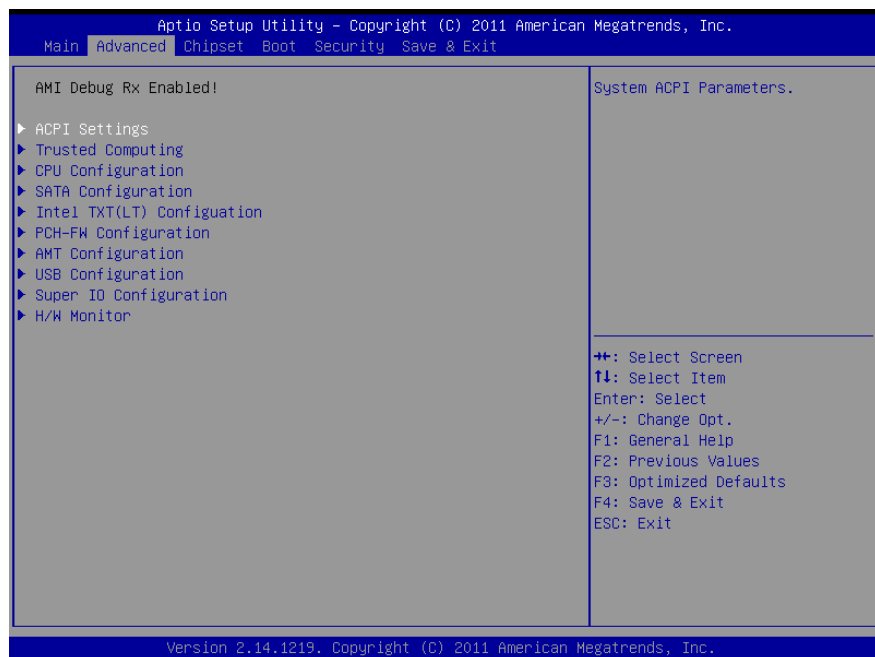
**Security** – The setup administrator password can be set here

**Save & Exit** – Save your changes and exit the program

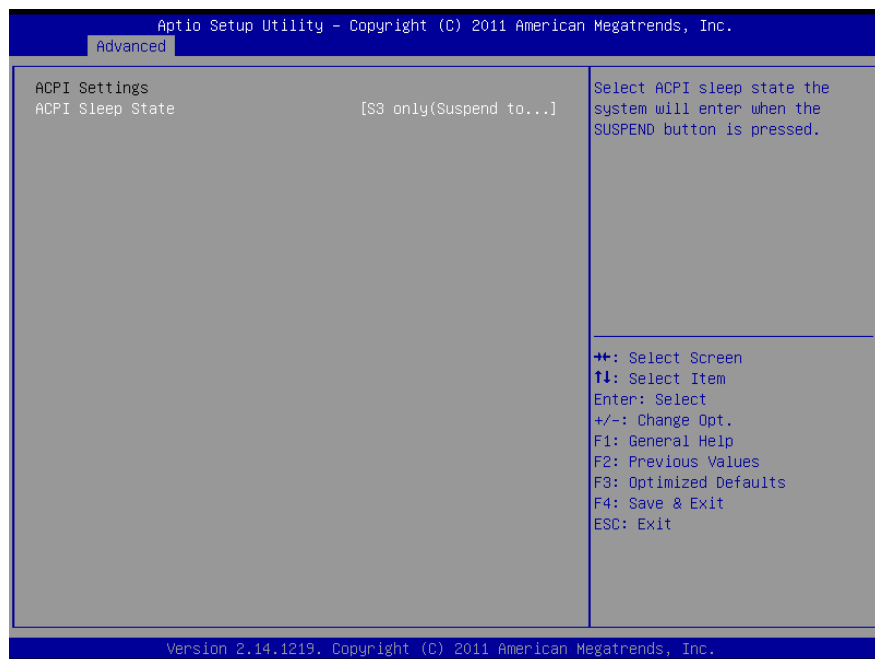
### 3.3 Setup Submenu: Main



### 3.4 Setup Submenu: Advanced



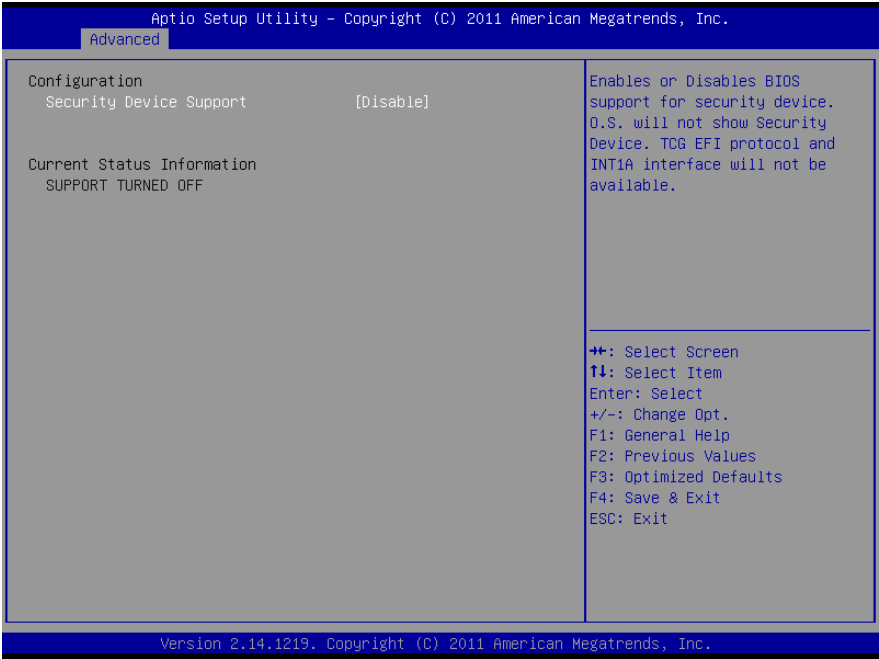
### 3.4.1 Advanced: ACPI Settings



Options Summary:

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

### 3.4.2 Advanced: Trusted Computing



Option Summary:

TPM SUPPORT	Disable	Default
	Enable	
Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.		



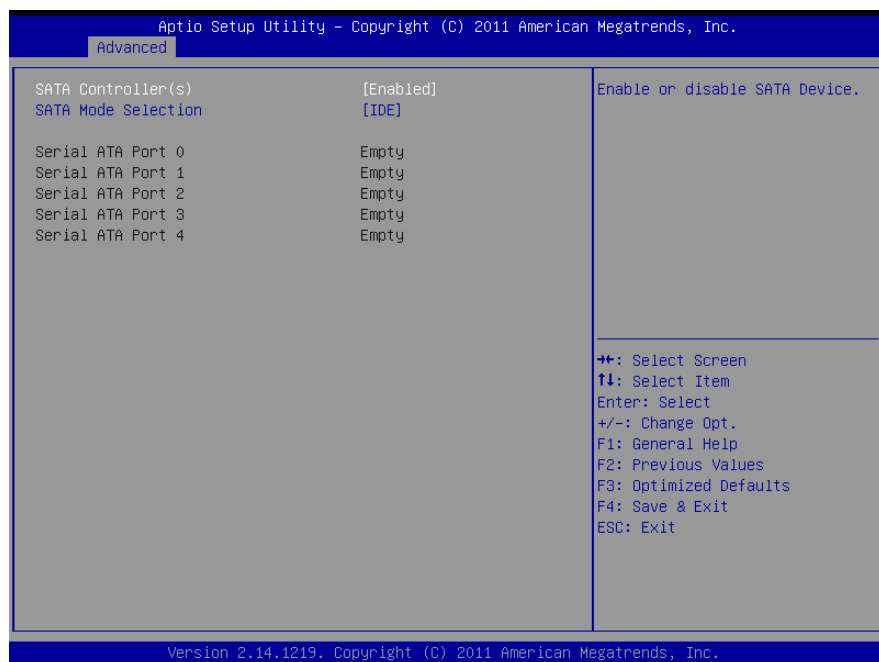
### 3.4.3 Advanced: CPU Configuration



#### Options Summary:

Hyper-threading	Disabled	
	Enabled	Default
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.		
Intel Virtualization Technology	Disabled	Default
	Enabled	
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology		

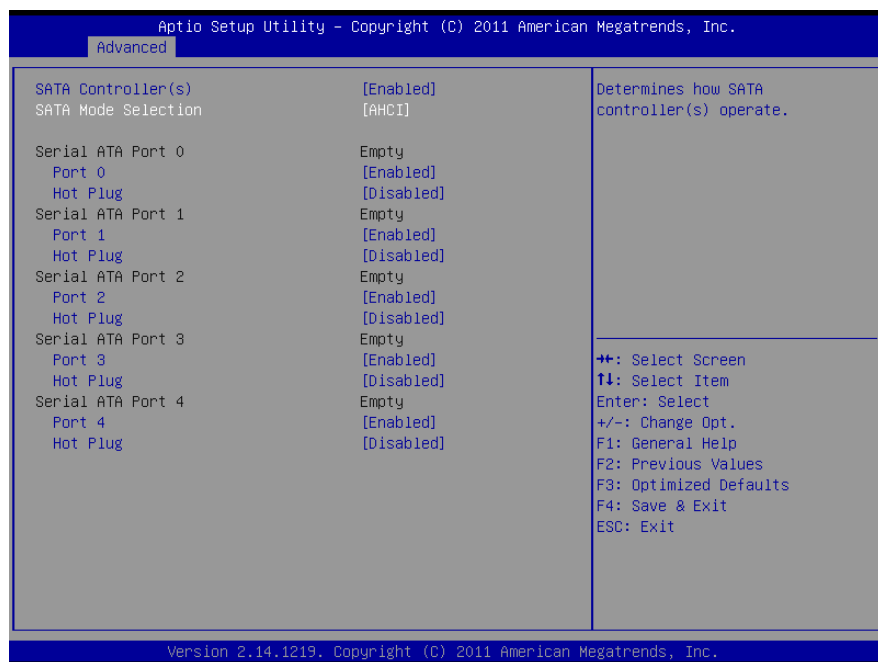
### 3.4.4 Advanced: SATA Configuration (IDE)



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.		

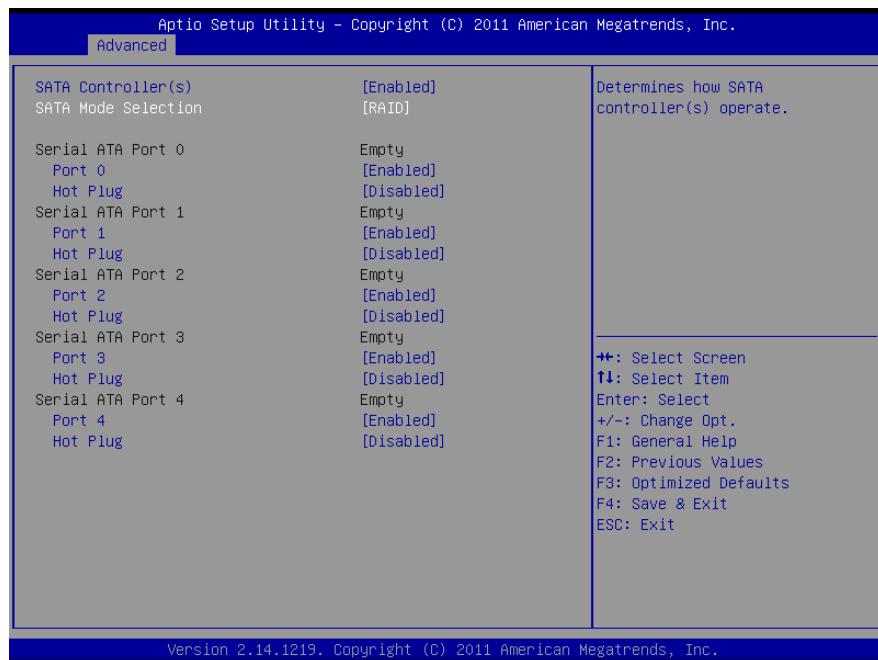
### 3.4.5 Advanced: SATA Configuration (AHCI)



#### Options Summary:

SATA Controller(s)	Disabled	
	Enabled	Default
Enable or Disable SATA Port.		
SATA Mode Selection	IDE	
	AHCI	Selected
	RAID	
Determines how SATA controller(s) operate.		
Port 0 ~ Port 4	Disable	
	Enabled	Enabled
Enable or Disable SATA Port		
Serial ATA Port Hot Plug Port 0 ~ Port 4	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		

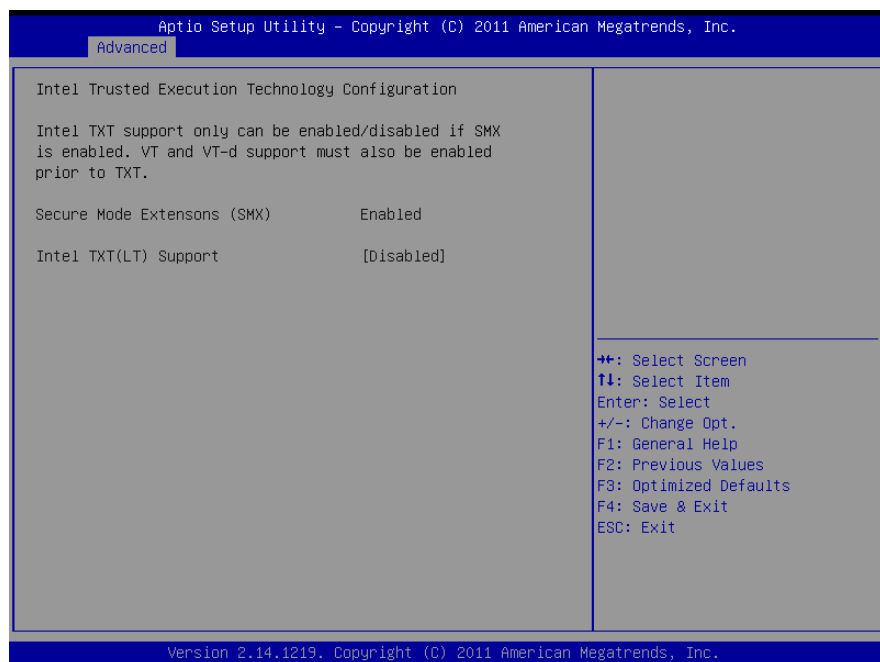
### 3.4.6 Advanced: SATA Configuration (RAID)



#### Options Summary:

SATA Controller(s)	Disabled	
	Enabled	Default
Enable or Disable SATA Port.		
SATA Mode Selection	IDE	
	AHCI	
	RAID	Selected
Determines how SATA controller(s) operate.		
Port 0 ~ Port 4	Disable	
	Enabled	Enabled
Enable or Disable SATA Port		
Serial ATA Port Hot Plug Port 0 ~ Port 4	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		

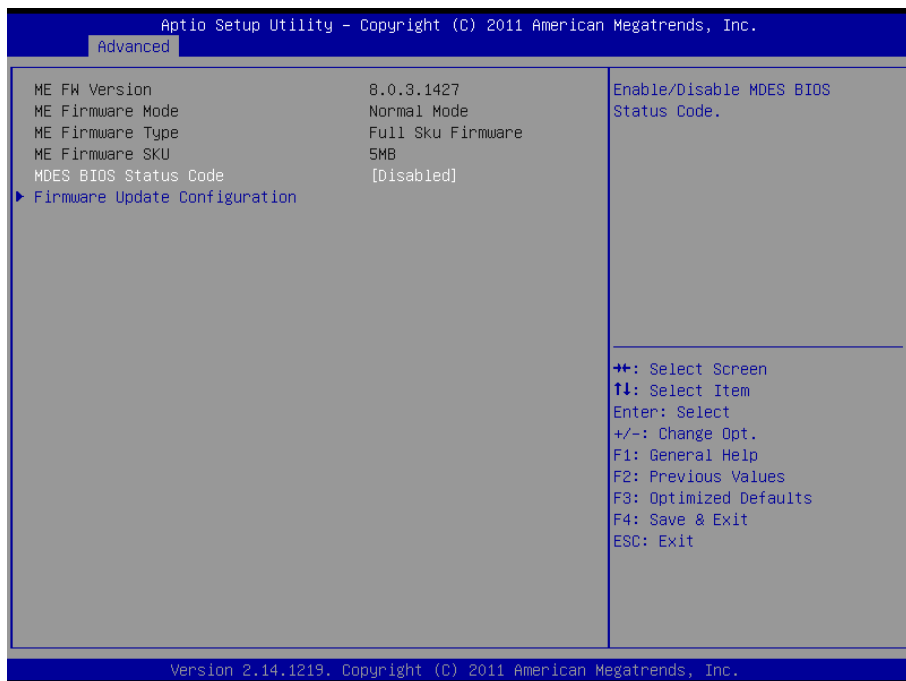
### 3.4.7 Advanced: Intel TXT (LT) Configuration



Options summary: (default setting)

Serial Port 1/2/3/4 Configuration		
Set Parameters of Serial Port 1/2/3/4		
Restore AC Power Loss	Power Off	
	Power On	
	Last State	
Select AC power state when power is re-applied after a power failure.		
EuP Power Control	Disabled	
	Enabled	
Configure Energy-using Product(EuP) Power Control.		

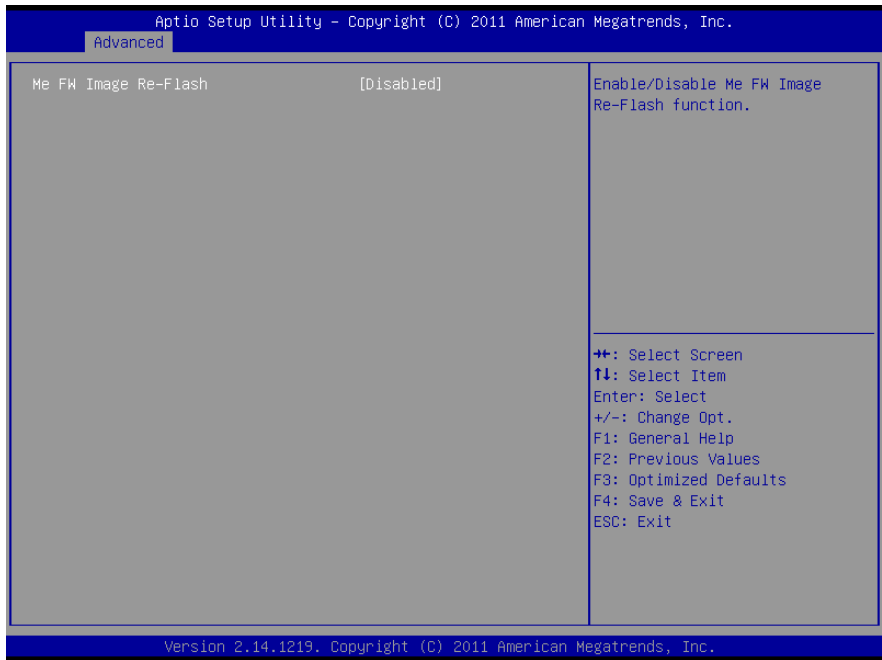
### 3.4.8 Advanced: PCH-FW Configuration



Options Summary:

MDES BIOS Status Code	Disabled	Default
	Enabled	
Enable/Disable MDES BIOS Status Code.		
Firmware Update Configuration	Configure Management Engine Technology Parameters	

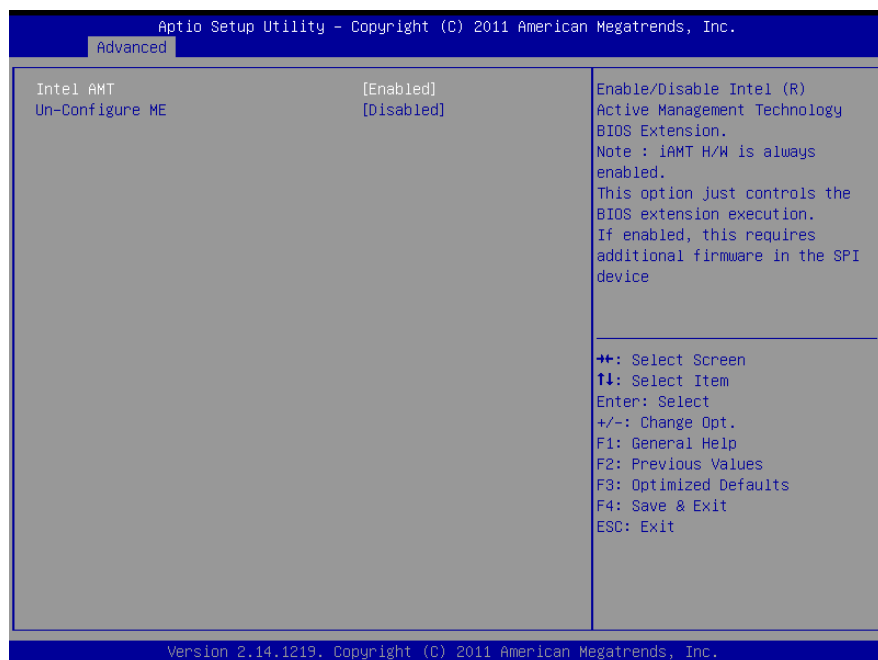
### 3.4.8.1 PCH-FW Configuration: Firmware Update Configuration



Options Summary:

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

### 3.4.9 Advanced: AMT Configuration

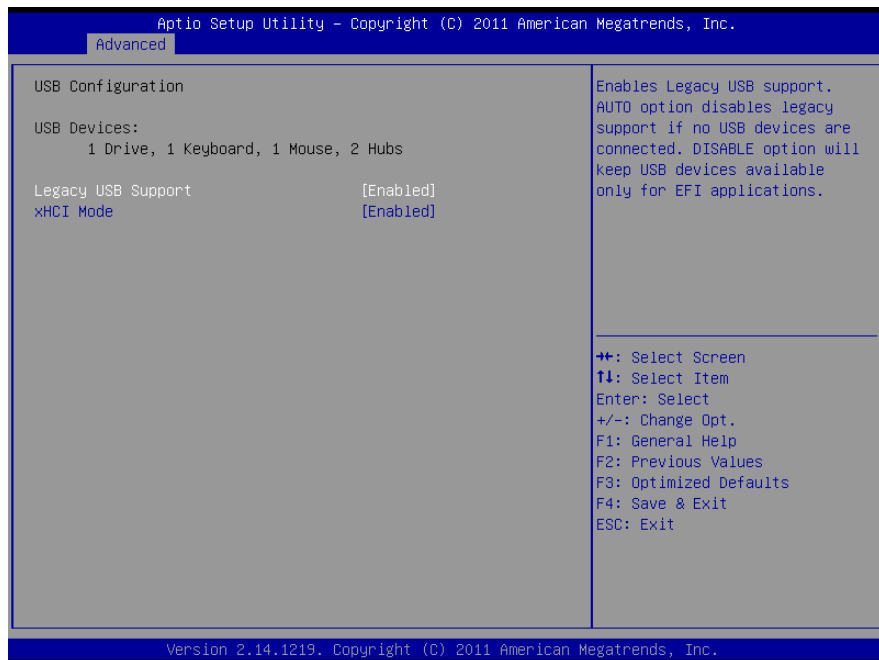


#### Options Summary:

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.		



### 3.4.10 Advanced: USB Configuration



#### Options Summary:

Legacy USB Support	Enabled	Default
	Disabled	
	Auto	
Enable 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	Disabled	
	Enabled	
Mode of operation of xHCI controller:		

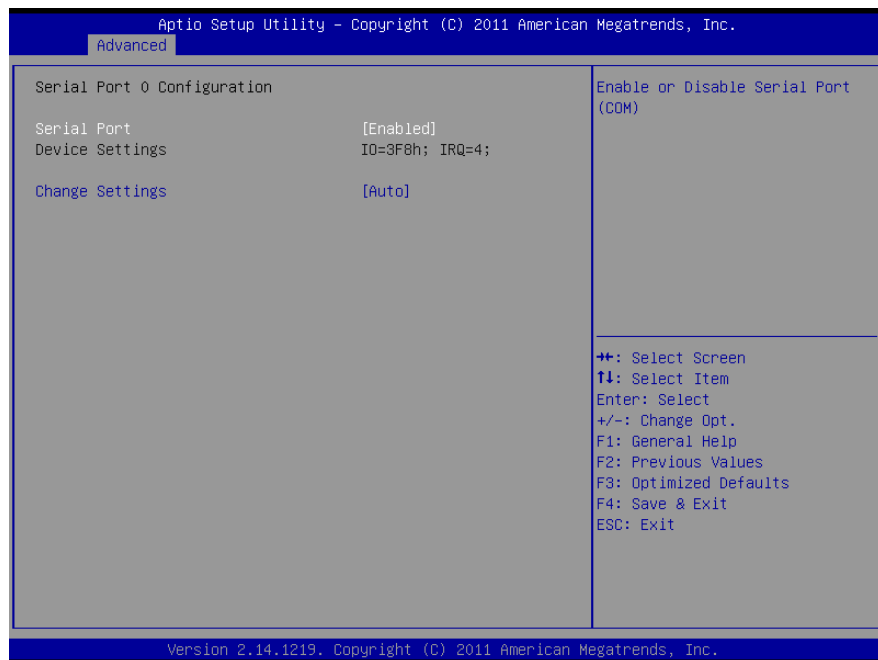
### 3.4.11 Advanced: Super IO Configuration



Options Summary :

Serial Port 0 Configuration	Set Parameters of Serial Port 3 (COMA)
Serial Port 1 Configuration	Set Parameters of Serial Port 4 (COMB)

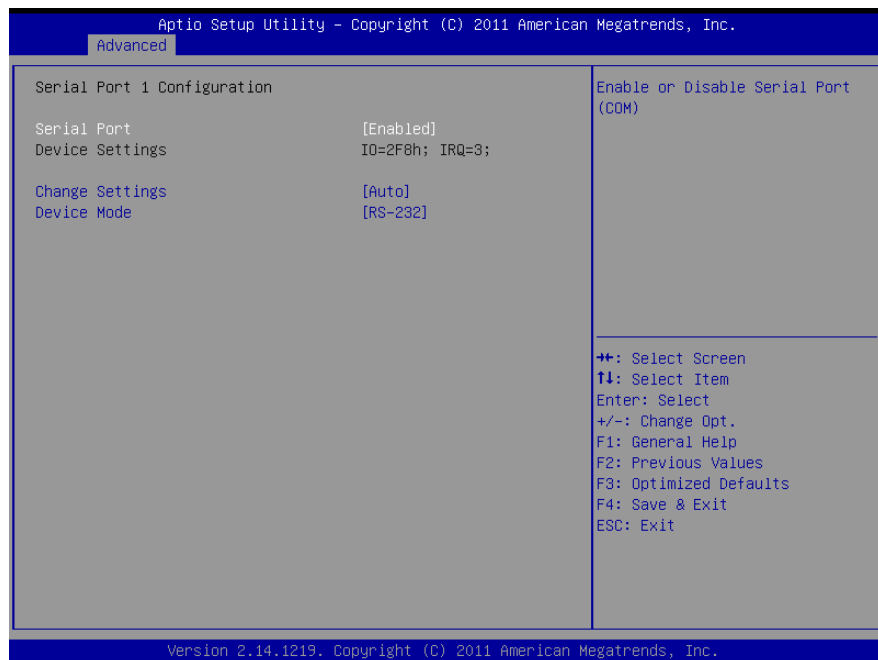
### 3.4.11.1 Super IO Configuration: Serial Port 0 Configuration



Options Summary:

Serial Port	Disabled	
	Enabled	Default
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=3F8h; IRQ=3,4;	
	IO=2F8h; IRQ=3,4;	
	IO=3E8h; IRQ=3,4;	
	IO=2E8h; IRQ=3,4;;	
Select an optimal setting for Super IO device.		

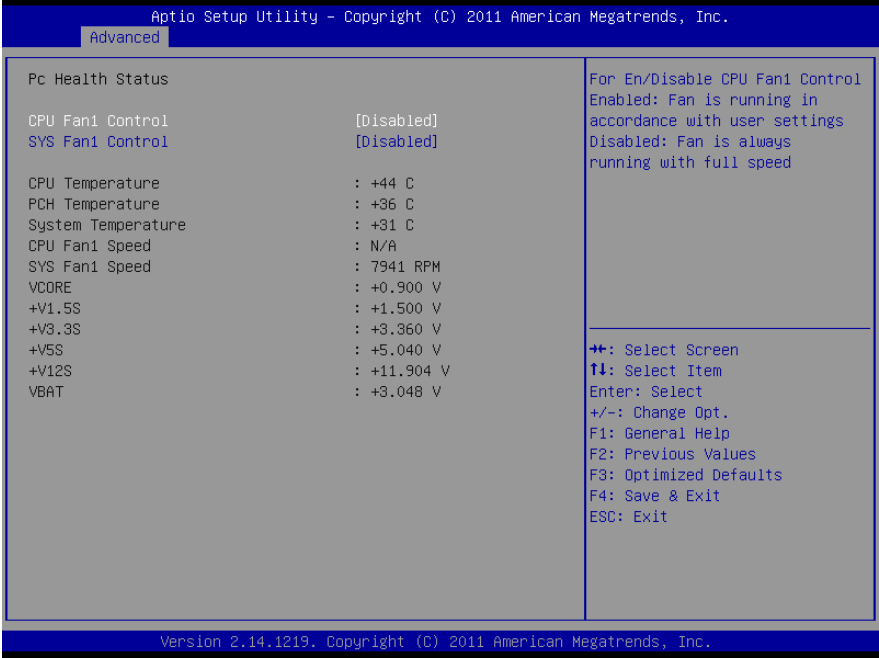
### 3.4.11.2 Super IO Configuration: Serial Port 1 Configuration



Options Summary:

Serial Port	Disabled	
	Enabled	Default
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=3F8h; IRQ=3,4;	
	IO=2F8h; IRQ=3,4;	
	IO=3E8h; IRQ=3,4;	
	IO=2E8h; IRQ=3,4,;	
Select an optimal setting for Super IO device.		
Device Mode	RS-232	Default
	RS-422	
	RS-485	
Change the Serial Port mode. Select <RS-232> or <RS-422> or <RS-485> mode		

### 3.4.12      Advanced: H/W Monitor



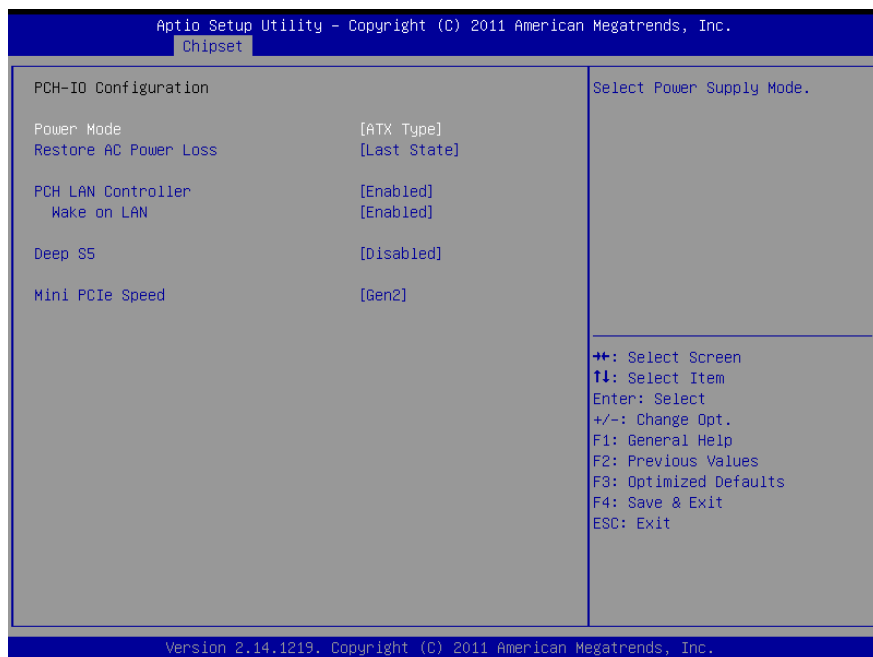
### 3.5 Setup submenu: Chipset



Options summary: (default setting)

Onboard Device		
Configure Onboard Devices		
PCI-IO Configuration		
South Bridge Parameters		
Memory Configuration		
Memory Parameters		
Graphic Configuration		
Graphic Parameters		

### 3.5.1 Chipset: PCH-IO Configuration



#### Options Summary:

Power Mode	ATX Type	Default
	AT Type	
Select power supply mode.		
Restore AC Power Loss	Power off	
	Power on	
	Last State	Default
Select AC power state when power is re-applied after a power failure. Notice: The system will power up after restore AC power if this item set to last state and shuts down via iAMT remote control.		
PCH LAN Controller	Enabled	Default
	Disabled	
Enable or disable onboard NIC.		
Wake on LAN	Enabled	Default
	Disabled	
Enable or disable integrated LAN to wake the system. (The Wake On LAN cannot be disabled if ME is on at Sx state. )		

Deep S5	Disabled	Default
	Enabled	
Enabled/Disabled Deep S5. Note : When Deep S5 is enabled, Intel ® 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.		



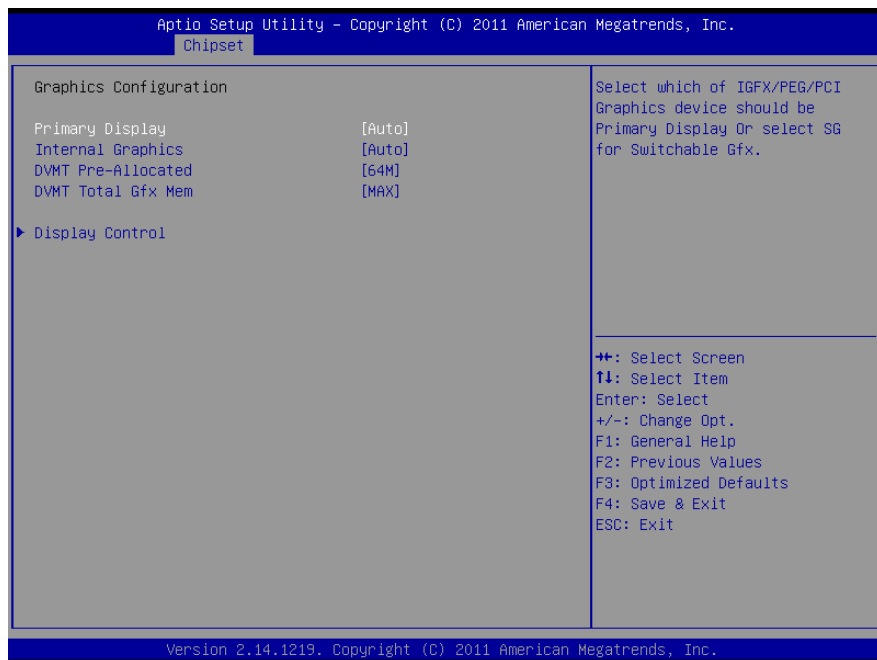
### 3.5.2 Chipset: System Agent (SA) Configuration



Options Summary:

VT-d	Disabled	
	Enabled	Default
Check to enable VT-d function on MCH		
PEG0 - Gen X	Auto	Default
	Gen1	
	Gen2	
	Gen3	
Configure PEG0 B0:D1:F0 Gen1-Gen3		
Graphics Configuration	Config Graphics Settings.	

### 3.5.3 Chipset: Graphic Configuration

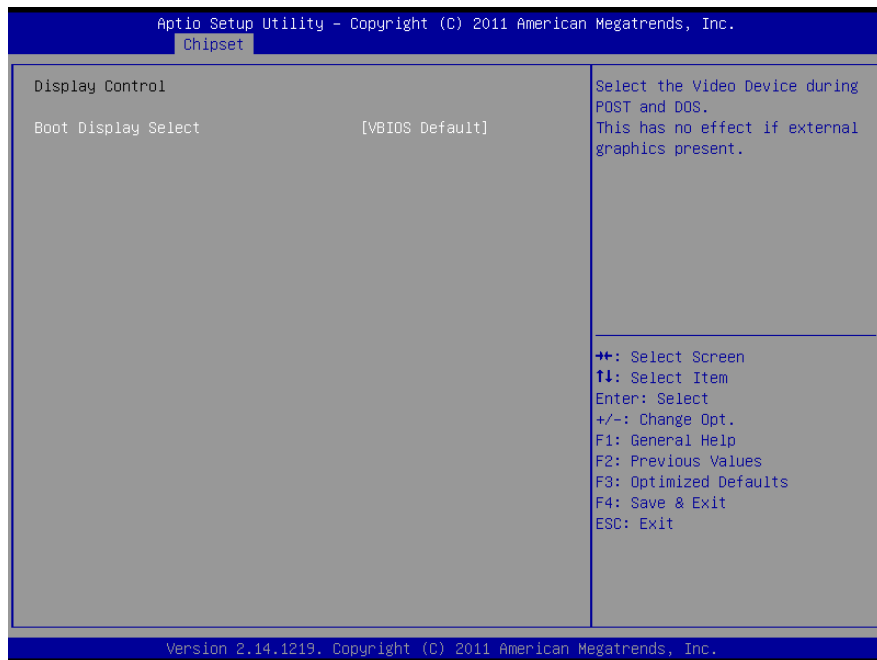


Options Summary :

Primary Display	Auto	Default
	IGfx	
	PEG	
Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx		
Internal Graphics	Auto	Default
	Disabled	
	Enabled	
Keep IGD enabled based on the setup options.		
DVMT Pre-Allocated	0M	
	32M	
	64M	Default
	96M	
	128M	
	160M	
	192M	

	224M	
	256M	
	288M	
	320M	
	352M	
	384M	
	416M	
	448M	
	480M	
	512M	
Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.		
DVMT Total Gfx Men	128M	
	256M	
	MAX	Default
Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.		

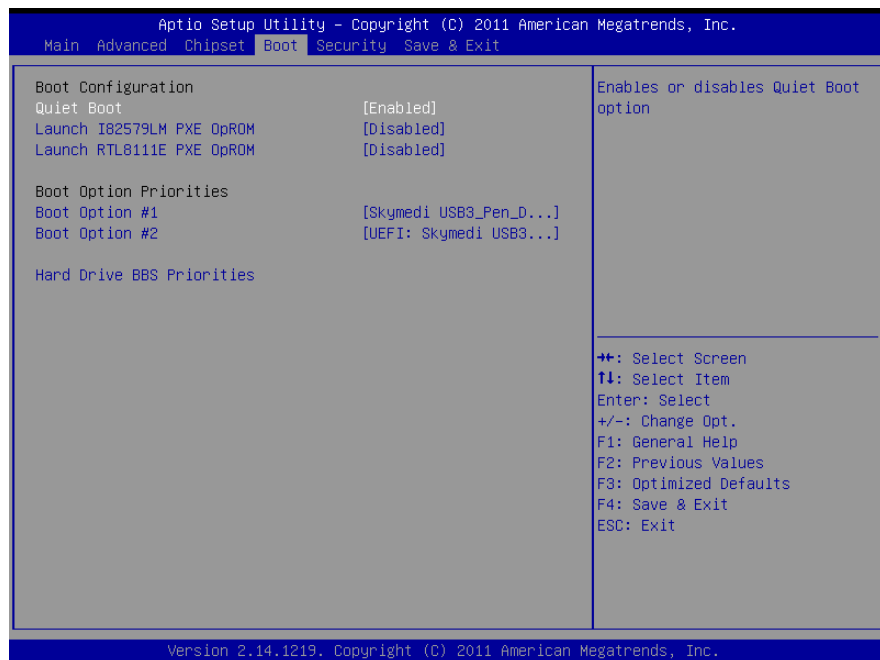
### 3.5.3.1 Graphic Configuration: Display Control



Options Summary:

Boot Display Select	VBIOS Default	Default
	CRT	
	DisplayPort 1	
	DVI	
	DisplayPort 2	
Select the Video Device during POST and DOS. This has no effect if external graphics present.		

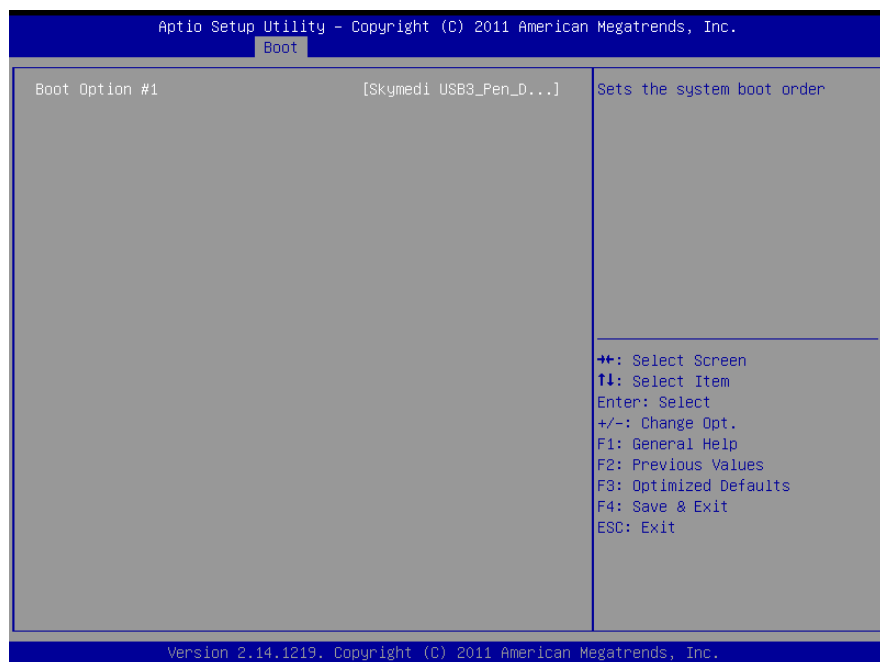
### 3.6 Setup submenu: Boot



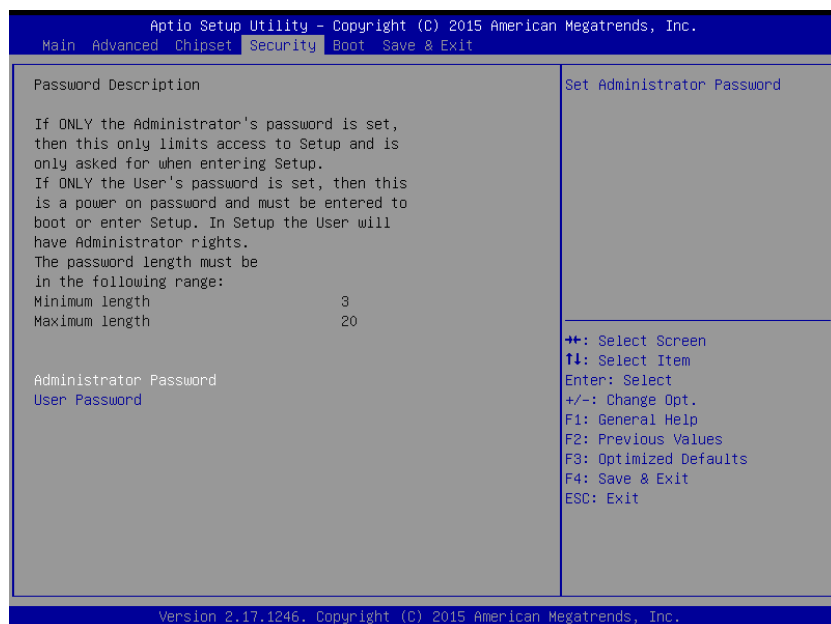
Options Summary :

Quiet Boot	Disabled	
	Enabled	Default
Enables or disables Quiet Boot option		
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		
Boot options #X	Your storage/disk devices	
Sets the system boot order		

### 3.6.1 Boot: Hard Drive BBS Priorities



## 3.7 Security



### Change User/Administrator Password

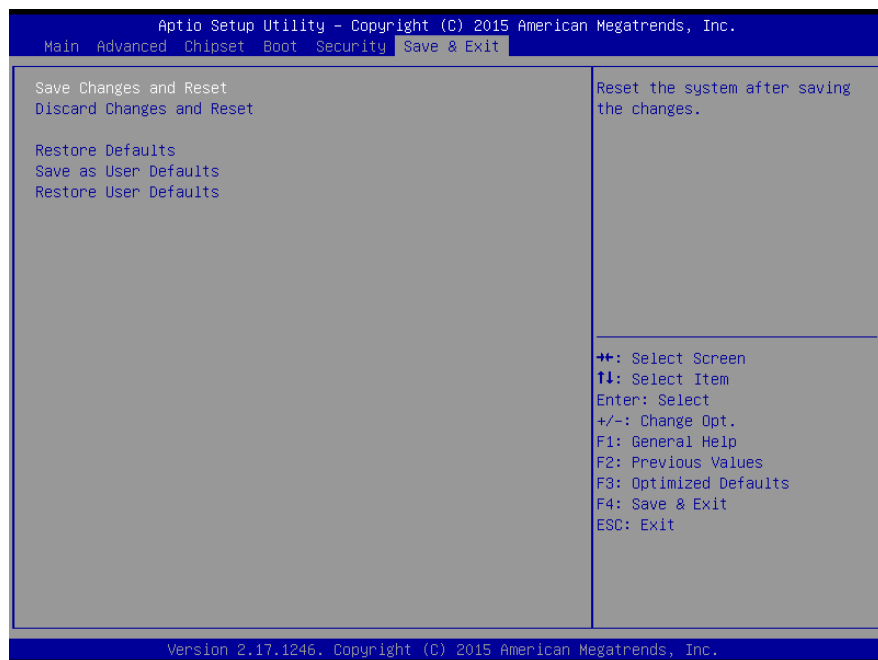
You can set a User Password once an Administrator Password is set. The password will be required during boot up, or when the user enters the Setup utility. Please Note that a User Password does not provide access to many of the features in the Setup utility.

Select the password you wish to set, press Enter to open a dialog box to enter your password (you can enter no more than six letters or numbers). Press Enter to confirm your entry, after which you will be prompted to retype your password for a final confirmation. Press Enter again after you have retyped it correctly.

### Removing the Password

Highlight this item and type in the current password. At the next dialog box press Enter to disable password protection.

### 3.8 Setup submenu: Save & Exit





# Chapter 4

---

Drivers Installation

## 4.1 Product CD/DVD

---

The AEC-6877 comes with a product DVD that contains all the drivers and utilities you need to setup your product. Insert the DVD and follow the steps in the autorun program to install the drivers.

In case the program does not start, follow the sequence below to install the drivers.

### Step 1 – Install Chipset Driver

1. Open the **STEP1 - Chipset** folder and select your OS
2. Open the **.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

### Step 2 – Install Graphic Driver

1. Open the **STEP2 - VGA** folder and select your OS
2. Open the **Setup.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

**Note:** If you are using Windows XP, install **dotnet35.exe** first.

### Step 3 – Install LAN Driver

1. Open the **STEP3 – LAN** folder
2. Both Intel and Realtek drivers have to be installed. Open either folder and select your OS
3. Open the **.exe** file in the folder and follow the instructions
4. Drivers will be installed automatically
5. Repeat step 2-4 for the remaining driver

#### Step 4 – Install Audio Driver

1. Open the **STEP4 - Audio** folder and select your OS
2. Open the **Setup.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

#### Step 5 – Install USB 3.0 Driver (Windows 7 only)

1. Open the **STEP5 – USB3.0** folder followed by **Setup.exe**
2. Follow the instructions
3. Drivers will be installed automatically

#### Step 6 – Install RAID & AHCI Driver

Please refer to Appendix C

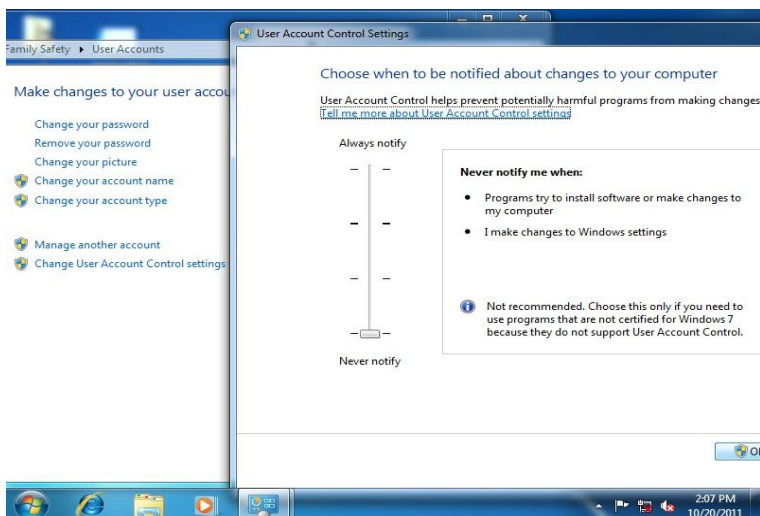
#### Step 7 – Install ME Driver

1. Open the **STEP7 - ME** folder and select your OS
2. Open the **.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

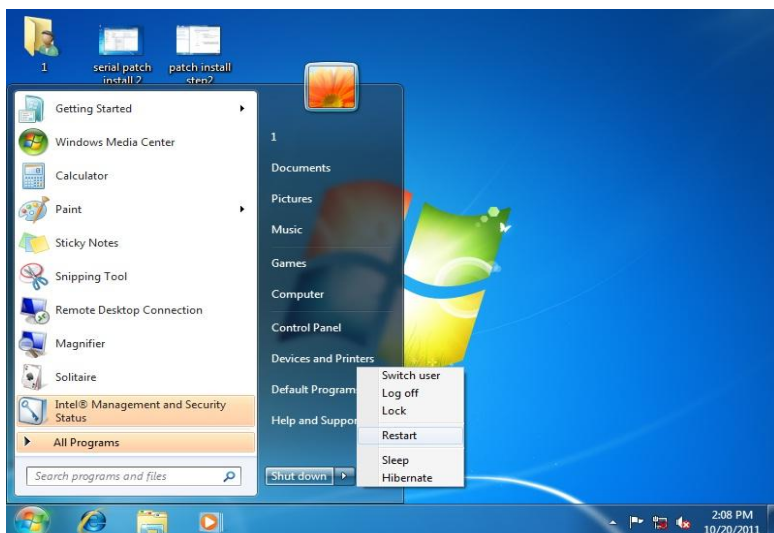
## Step 8 – Install Serial Port Driver (Optional)

For Windows 7:

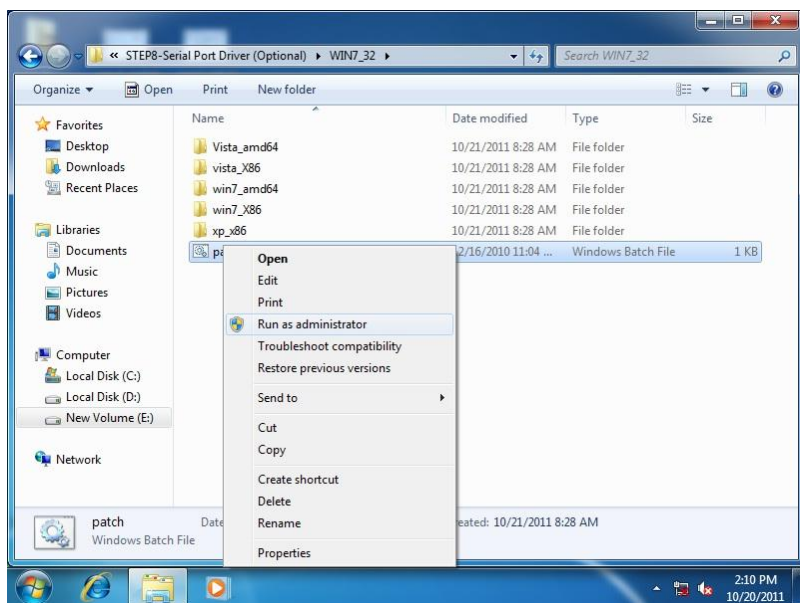
1. Change User Account Control settings to **Never notify**



2. Reboot and log in as administrator

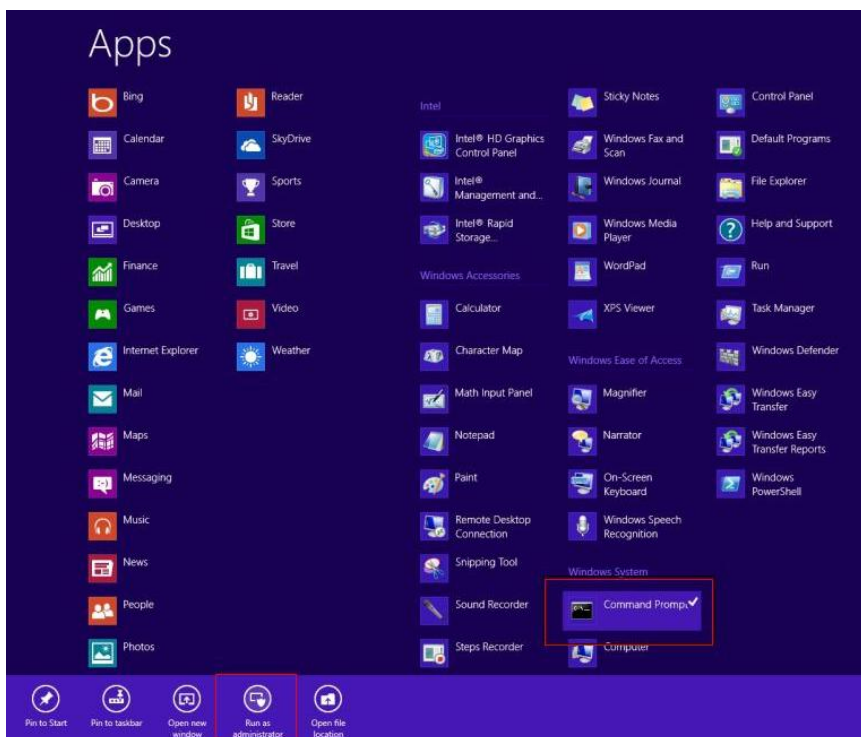


### 3. Run patch.bat as administrator

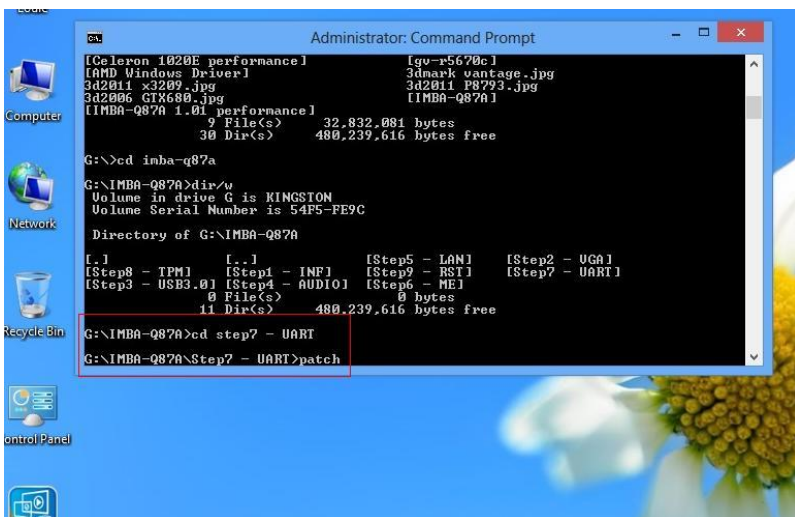


## For Windows 8:

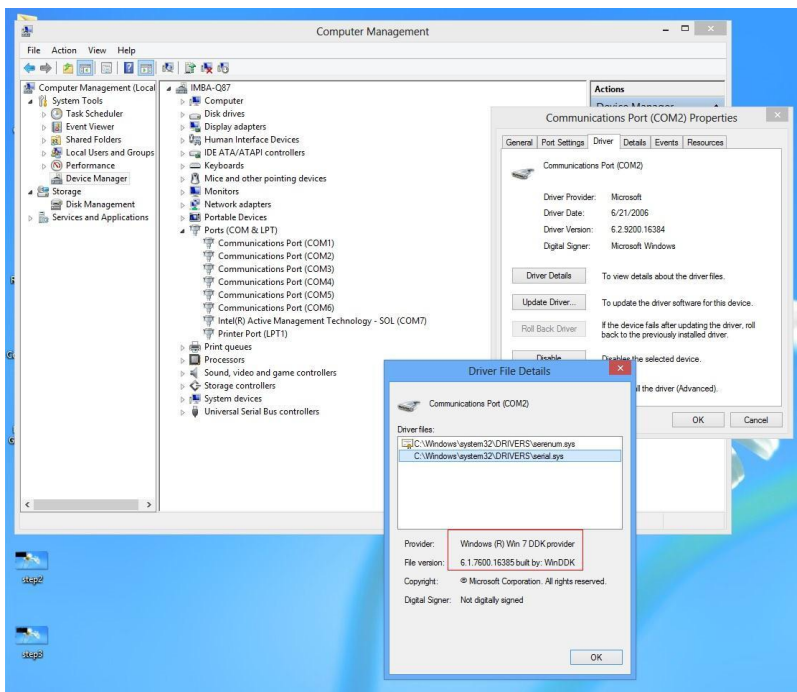
1. Open the Apps Screen, right click on the **Command Prompt** tile and select **Run as Administrator**



2. To install the driver (patch.bat), you will first have to locate the file in command prompt. To do that, go to the folder in which the file resides by entering **cd (file path)** eg: if the file is in a folder named abc in c drive, enter **cd c:\abc** (screenshot for reference only)
3. You are now at the folder where the file is located. Enter the **patch.bat** to open and install the drivers.



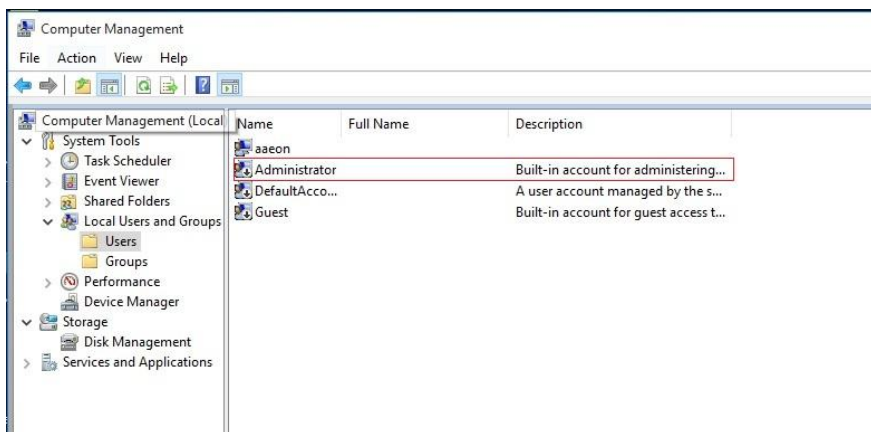
4. Reboot after installation completes.
5. To confirm the installation, go to Device Manager, expand the Ports (COM & LPT) tree and double click on any of the COM ports to open its properties. Go to the Driver tab, select Driver Details and click on **serial.sys**, you should see its provider as **Windows (R) Win 7 DDK Provider**.



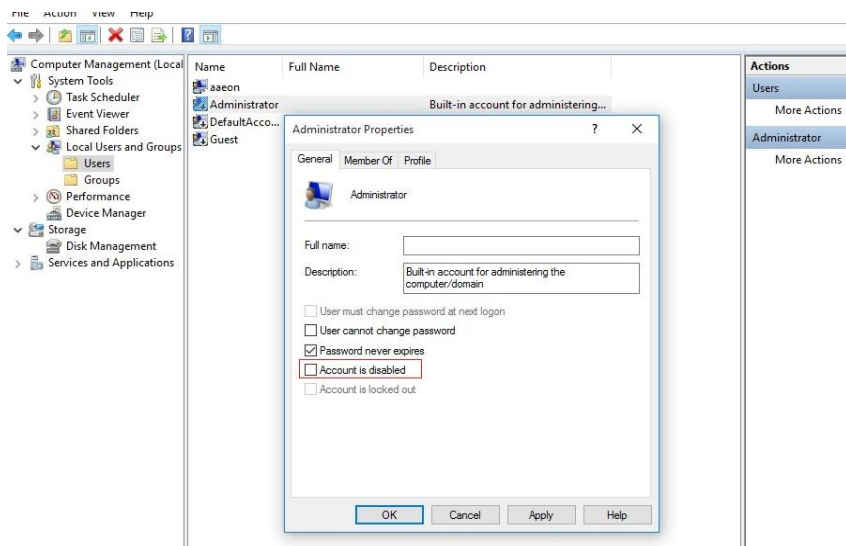


For Windows 10:

1. You will need administrator rights to install the drivers. To get it, first go to **Computer Management** in **Control Panel** and double-click on **Administrator**



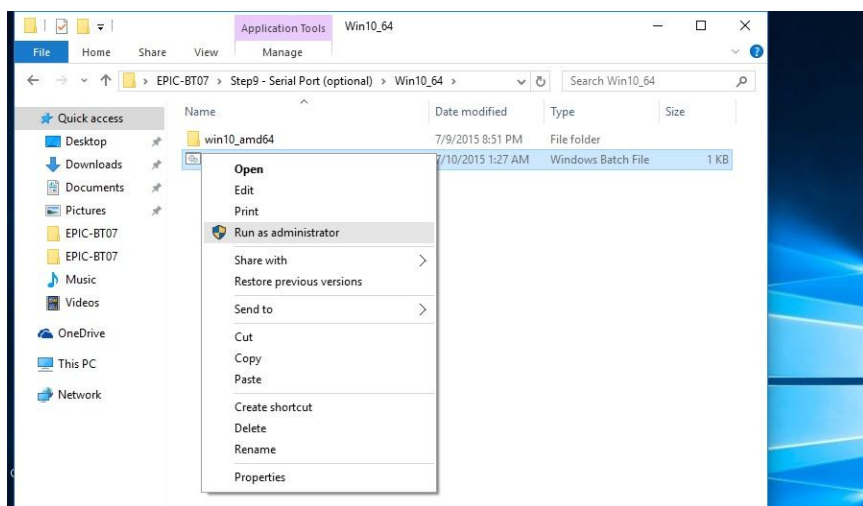
2. In the dialog box, **uncheck** the **Account is disabled** option to enable administrator account.



- Restart and sign in as the administrator (not password-protected by default)



- Go back to the Windows 10 Serial Port drivers directory and run **patch.bat** as administrator.



# Appendix A

---

## Watchdog Timer Programming

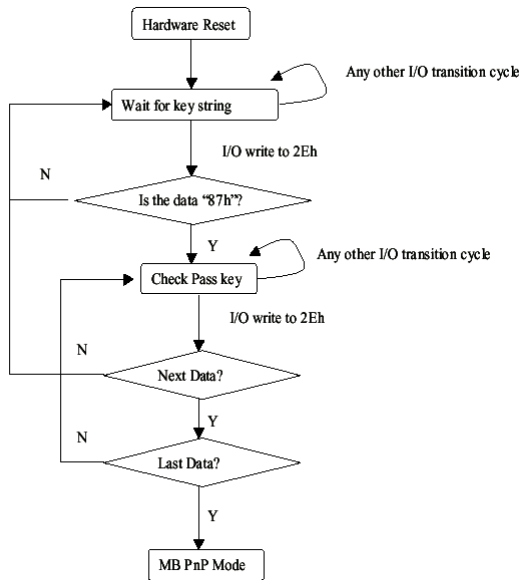
# A.1 Watchdog Timer Programming

AEC-6877 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 8728F 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.

Bit	Description
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)

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

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

Bit	Description
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)

Bit	Description
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 (IO)	
[00000000 - 0000001F]	Direct memory access controller
[00000000 - 00000CF7]	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 #3
	[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 Chipset Family SATA AHCI Controller
	[0000F0A0 - 0000F0A3] Intel(R) 7 Series Chipset Family SATA AHCI Controller
	[0000F0B0 - 0000F0B7] Intel(R) 7 Series Chipset Family SATA AHCI Controller
	[0000F0C0 - 0000F0C3] Intel(R) 7 Series Chipset Family SATA AHCI Controller
	[0000F0D0 - 0000F0D7] Intel(R) 7 Series Chipset Family SATA AHCI Controller
	[0000F0E0 - 0000F0E7] Intel(R) Active Management Technology - SOL (COM3)
	[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
[40004000 - 40004FFF]	System board
[DFA00000 - DFA00FFF]	Motherboard resources
[DFA00000 - FEFFFFFF]	PCI bus
[E0000000 - EFFFFFFF]	Intel(R) HD Graphics 4000
[F0000000 - F0003FFF]	Realtek PCIe GBE Family Controller #3
[F0000000 - F00FFFFFF]	Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12
[F7800000 - F7BFFFFFF]	Intel(R) HD Graphics 4000
[F7C00000 - F7C00FFF]	Realtek PCIe GBE Family Controller #3
[F7C00000 - F7CFFFFFF]	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 Chipset Family SATA AHCI Controller
[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 (COM3)
[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

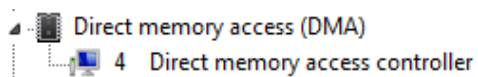


	(ISA) 0x00000079 (121)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007A (122)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007B (123)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007C (124)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007D (125)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007E (126)	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) Active Management Technology - SOL (COM3)
	(PCI) 0x00000016 (22)	High Definition Audio Controller
	(PCI) 0x00000017 (23)	Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E26
	(PCI) 0xFFFFFFF8 (-8)	Realtek PCIe GBE Family Controller #3
	(PCI) 0xFFFFFFF9 (-7)	Intel(R) 82579LM Gigabit Network Connection
	(PCI) 0xFFFFFFFA (-6)	Intel(R) USB 3.0 eXtensible Host Controller
	(PCI) 0xFFFFFFF8 (-5)	Intel(R) HD Graphics 4000
	(PCI) 0xFFFFFFFC (-4)	Intel(R) 7 Series Chipset Family SATA AHCI Controller
	(PCI) 0xFFFFFFFD (-3)	Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12
	(PCI) 0xFFFFFFF8 (-2)	Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 1 - 1E10

## B.4 DMA Channel Assignments

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# Appendix C

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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 -> F6 Floppy - x86" to Disk

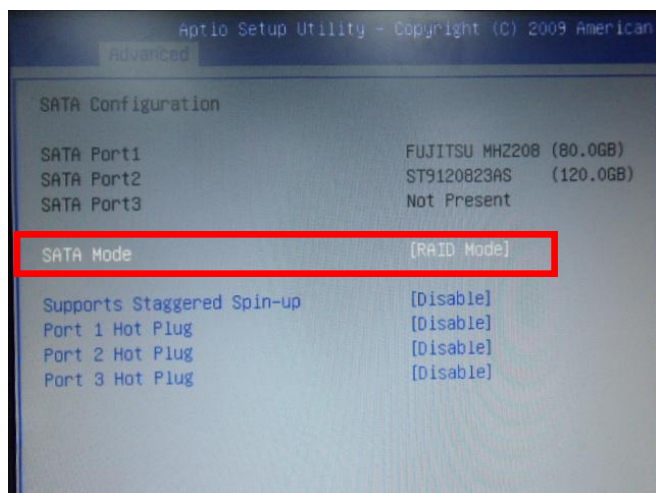


Step 2: Connect the USB Floppy (disk with RAID files) to the board



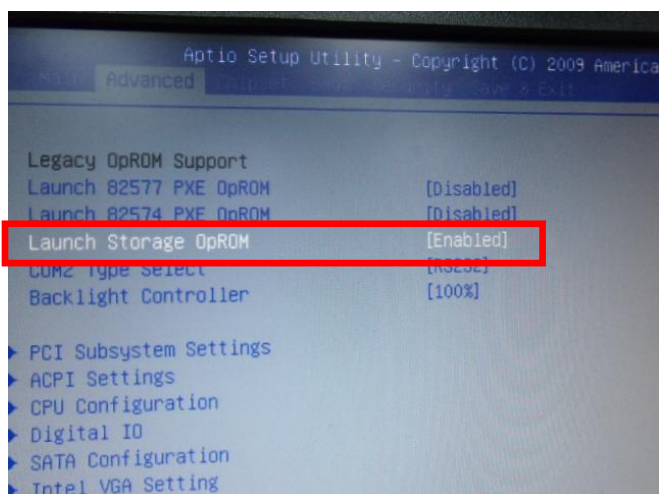
Step 3: The setting procedures "In BIOS Setup Menu"

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



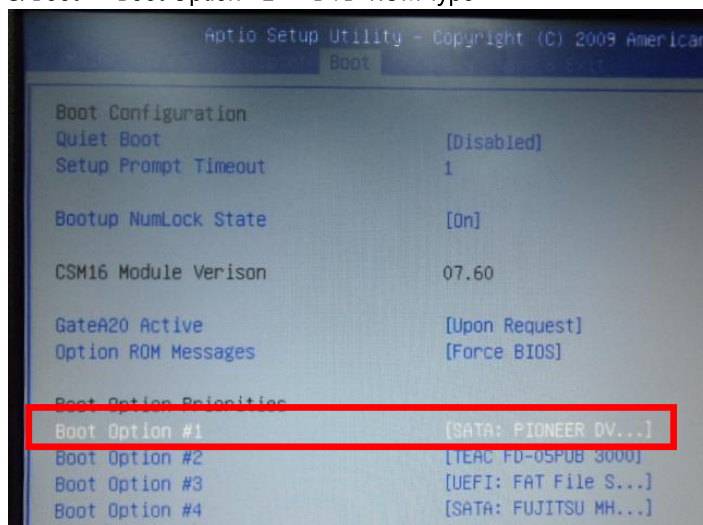
Step 4: The setting procedures "In BIOS Setup Menu"

B: Advanced -> Launch Storage OpROM -> Enabled



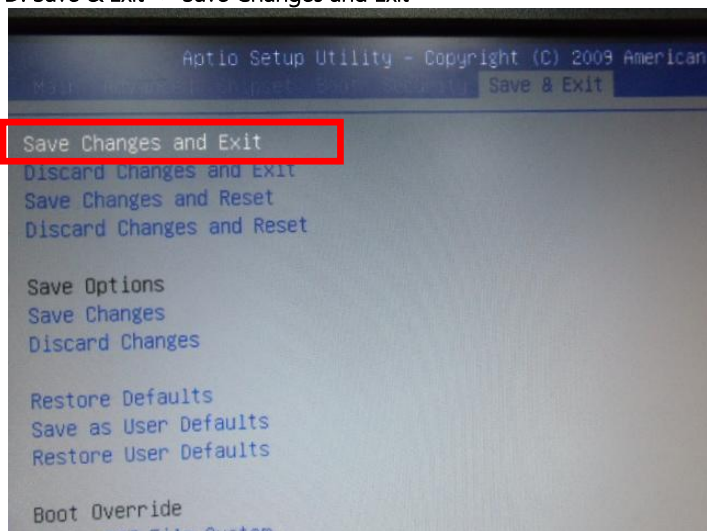
Step 5: The setting procedures "In BIOS Setup Menu"

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

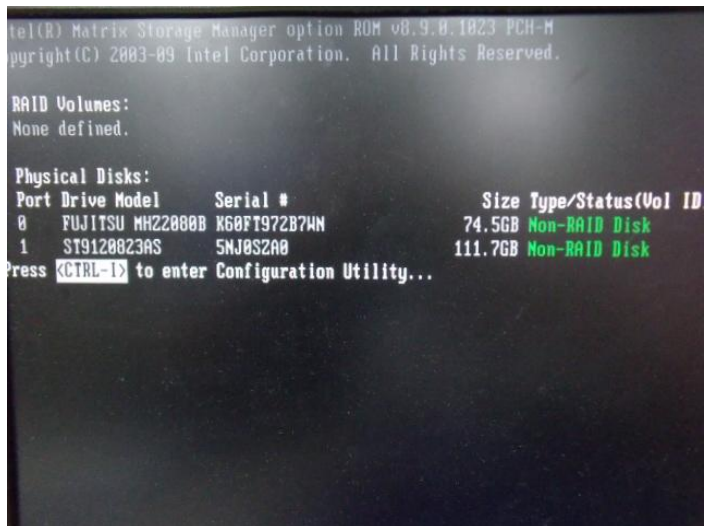


Step 6: The setting procedures "In BIOS Setup Menu"

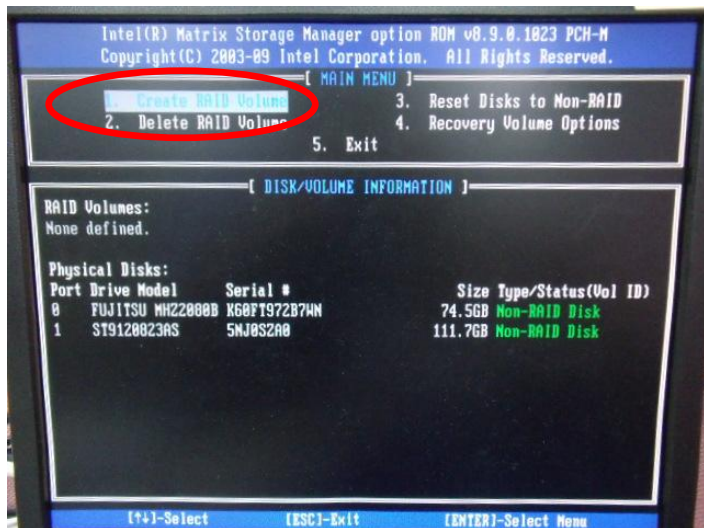
D: Save & Exit -> Save Changes and Exit



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

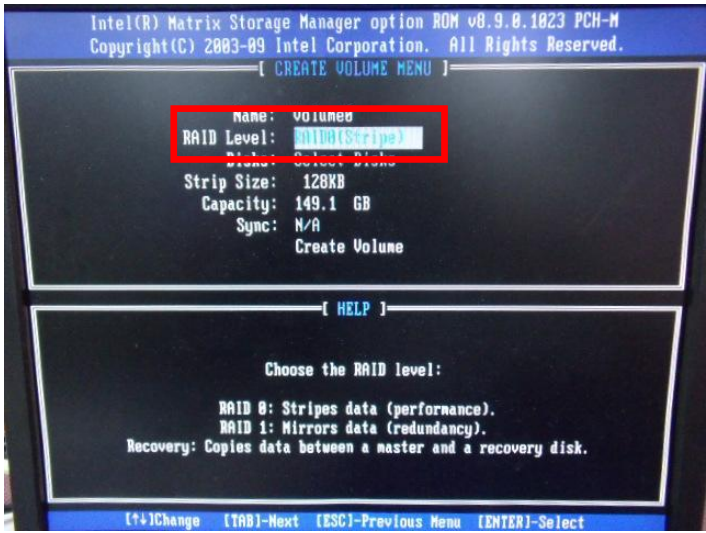


Step 8: Choose "1.Create RAID Volume"

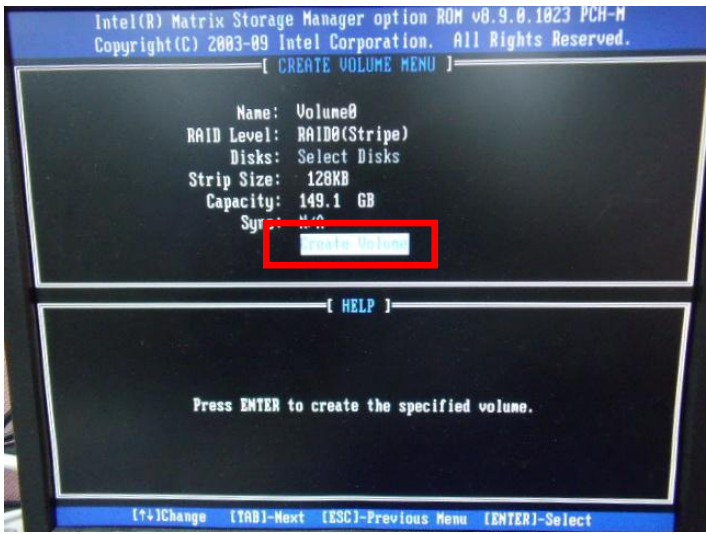




Step 9: RAID Level -> RAID0(Stripe)



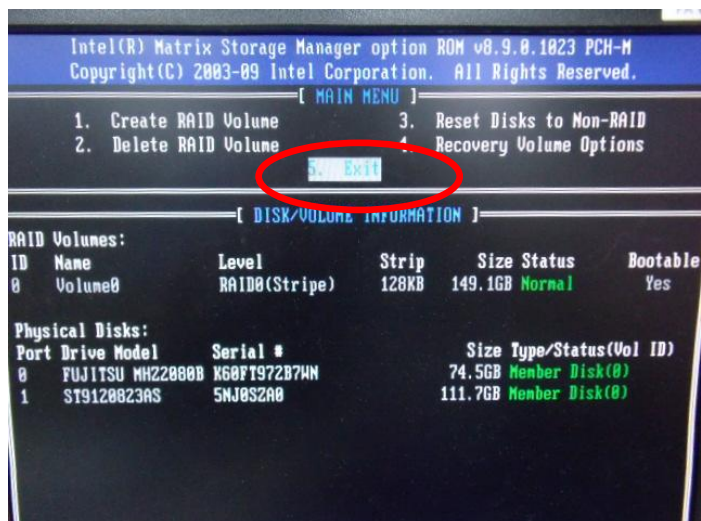
Step 10: Choose "Create Volume"



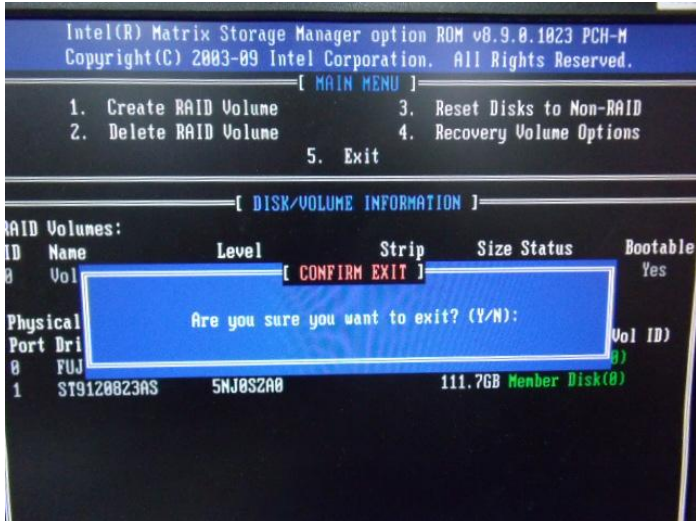
Step 11: Choose "Y"



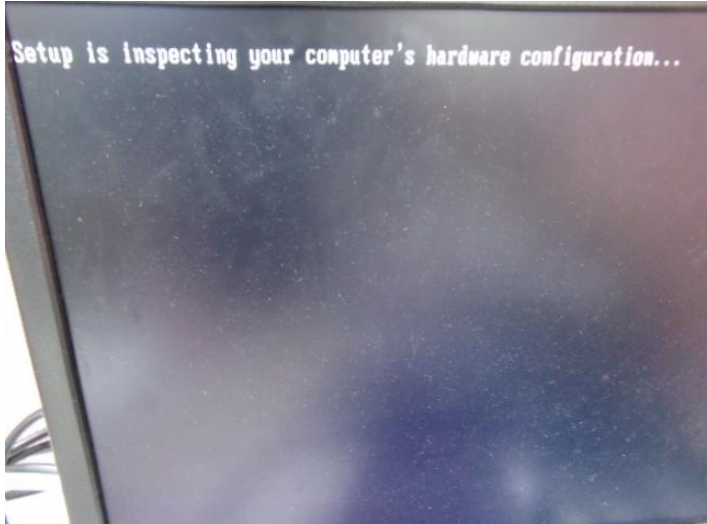
Step 12: Choose "5. Exit"



Step 13: Choose "Y"



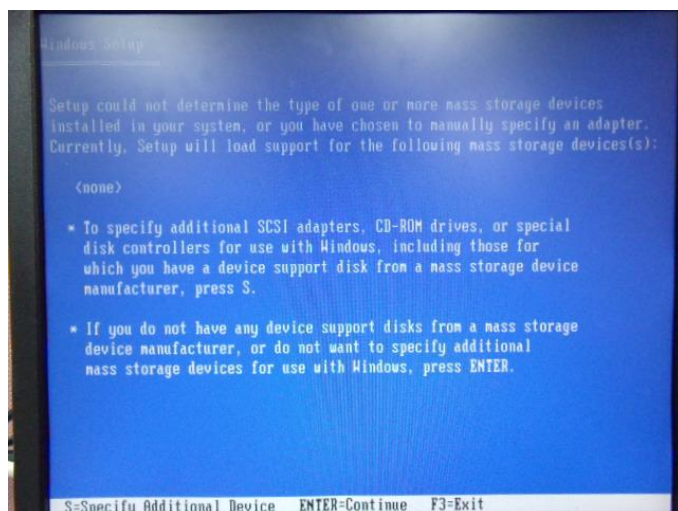
Step 14: Setup OS



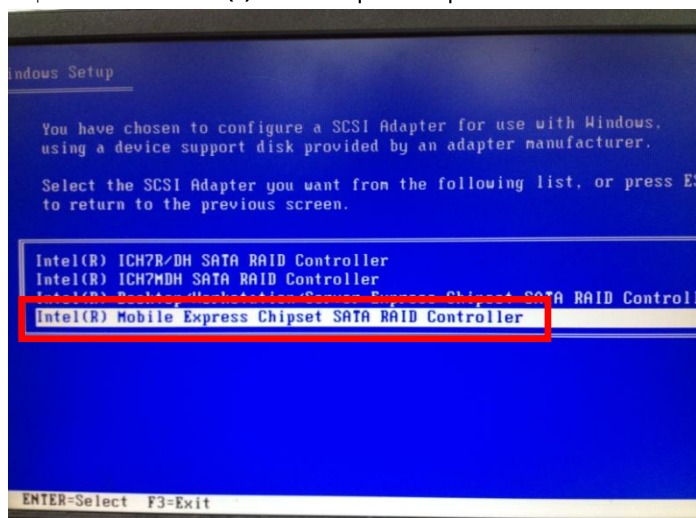
Step 15: Press "F6"



Step 16: Choose "S"



Step 17: Choose "Intel(R) Mobile Express Chipset SATA RAID Controller"

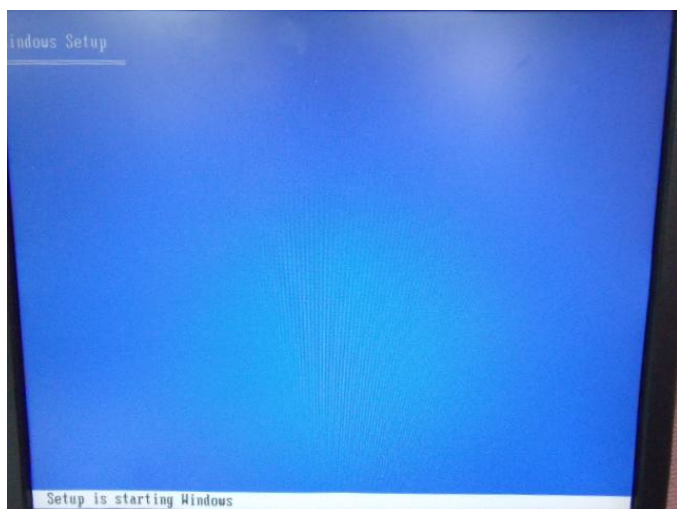


Step 18: It will show the model number you select and then press "ENTER"





## 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

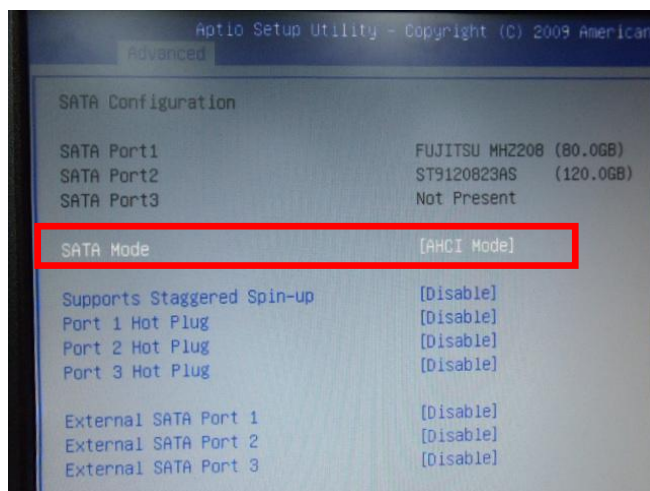


Step 2: Connect the USB Floppy (disk with AHCI files) to the board



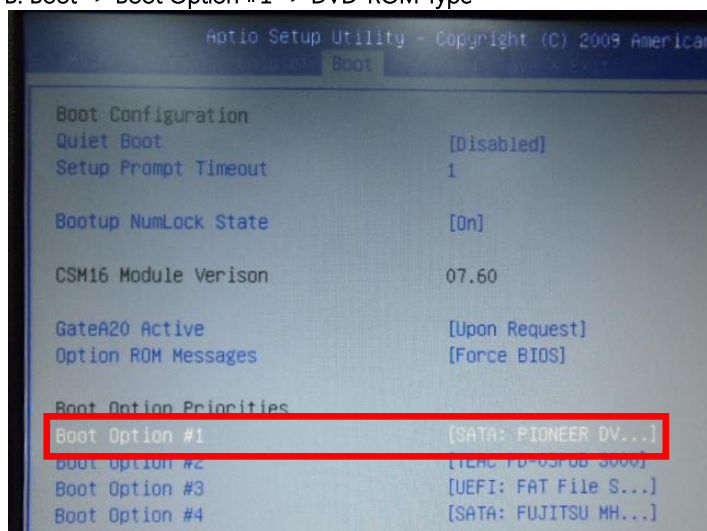
Step 3: The setting procedures "In BIOS Setup Menu"

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



Step 4: The setting procedures "In BIOS Setup Menu"

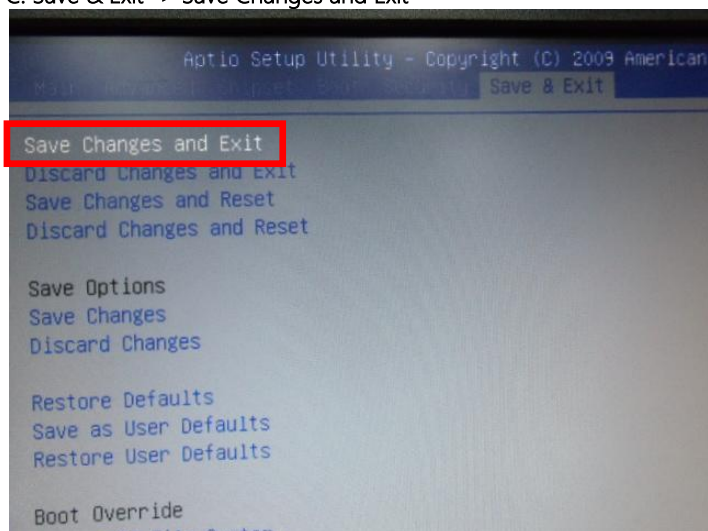
B: Boot -> Boot Option #1 -> DVD-ROM Type



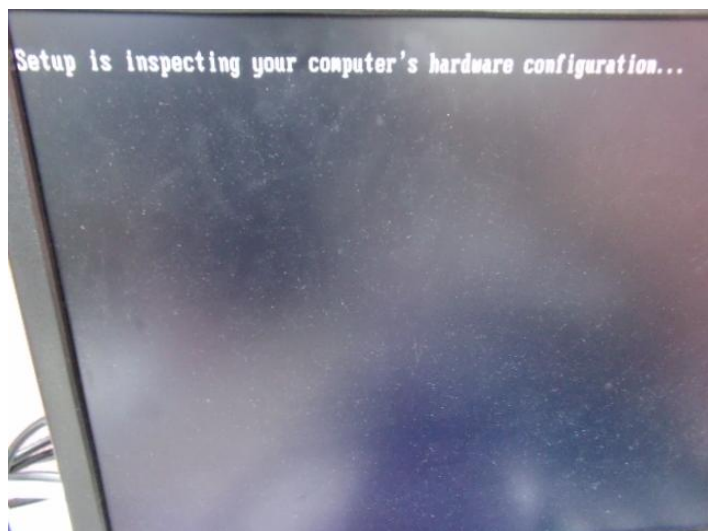


Step 5: The setting procedures "In BIOS Setup Menu"

C: Save & Exit -> Save Changes and Exit



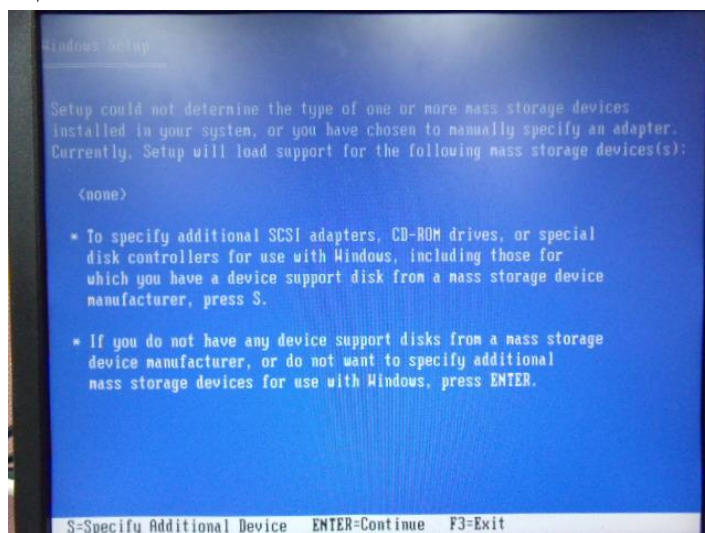
Step 6: Setup OS



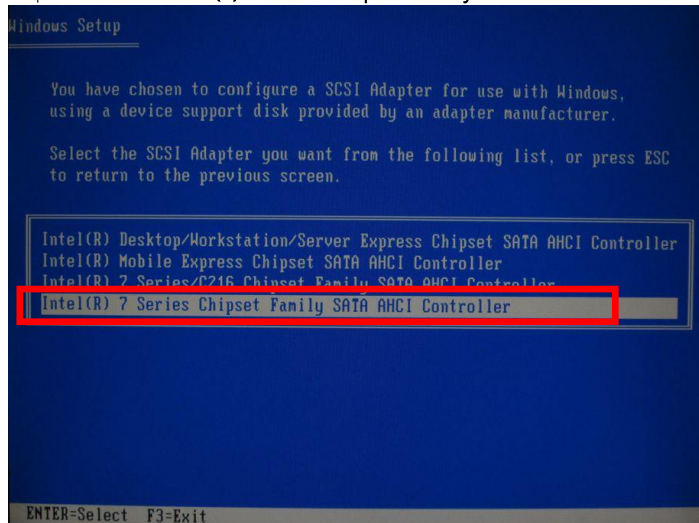
## Step 7: Press "F6"



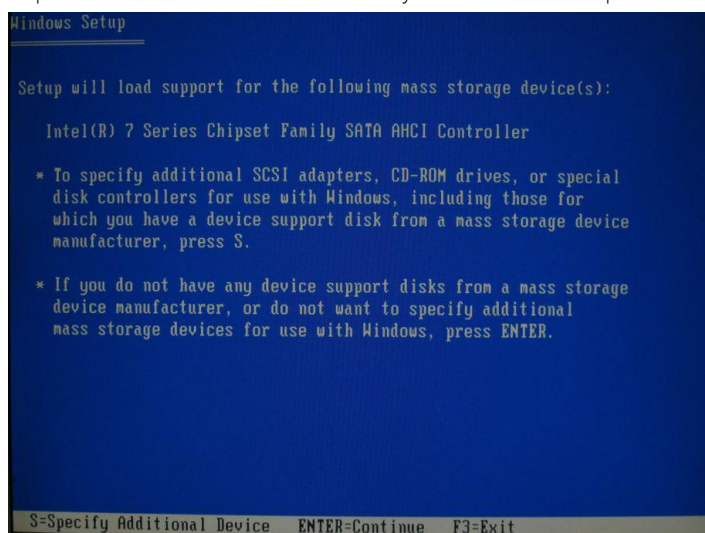
## Step 8: Choose "S"



Step 9: Choose "Intel(R) 7 Series Chipset Family SATA AHCI Controller"



Step 10: It will show the model number you select and then press "ENTER"



Step 11: Setup is loading files

