FWS-2260

Network Appliance

User's Manual 1st Ed

Last Updated: February 19, 2016

Copyright Notice

Acknowledgement

Packing List

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

Item	Quantity
● FWS-2260	1
● SATA cable	1
● SATA power cable	1
● Rubber foot	4
● Power adapter	1

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

About this Document

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.

Safety Precautions

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 the 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

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	O	O	O	O	O	O
外部信号连接器及线材	O	O	O	O	O	O
外壳	O	O	O	O	O	O
中央处理器与内存	O	O	O	O	O	O
硬盘	O	O	O	O	O	O
电源	O	O	O	O	O	O

O：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。

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。

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、光驱、触控模块为选购品。

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	O	O	O	O	O	O
Wires & Connectors for External Connections	O	O	O	O	O	O
Chassis	O	O	O	O	O	O
CPU & RAM	O	O	O	O	O	O
Hard Disk	O	O	O	O	O	O
PSU	O	O	O	O	O	O

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.

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.

Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

Table of Contents

Chapter 1

Product Specifications

1.1 Specifications

System	
Processor	Intel® Celeron™ N3160/N3060 processor SoC
System Memory	204-pin Dual channel DDR3L 1600MHz SODIMM slot x 2, up to 8GB
Chipset	-
Ethernet	Intel® I211AT controller Gigabit Ethernet x 6 (with up to 2 pairs with LAN bypass)
BIOS	AMI BIOS
Serial ATA	SATA II port x1 CompactFlash card socket x 1
SSD	-
Expansion Interface	MiniCard slot with SIM socket x 1 (Optional SIM socket x 2, USB Signal only)
Watchdog Timer	System reset: 1~255 steps by software programming
RTC	Internal RTC
Storage	2.5" SATA HDD bay x 1 CompactFlash card socket x 1
Front Panel I/O	Power LED x 1 Bypass LED x 2 Status LED x 1 HDD Active LED x 1 LAN LED x 12

Rear Panel I/O	Software programmable button x 1 DC 12V power input x 1 Power Button x 1 RJ-45 LAN Port x 6 USB 3.0 x 2 RJ-45 Console Port x 1 HDMI Port x 1 Optional Antenna Hole x 2
Color	Black
Power Supply	DC 60W power input
Power Requirement	DC 12V power jack
Dimension (W x D x H)	260 x 178 x 44mm (10.23 x 7.01 x 1.73")
Certification	CE/FCC Class A

Display

Chipset	-
Graphic Engine	Intel® HD Graphics
Resolution	2560 x 1600 @ 60Hz
Output Interface	HDMI

I/O

Serial Port	RJ-45 console x 1
Keyboard and Mouse	Reserved pin header
USB	USB 3.0 x 1 Internal USB 3.0 2x10 pin box header x 1

Environmental

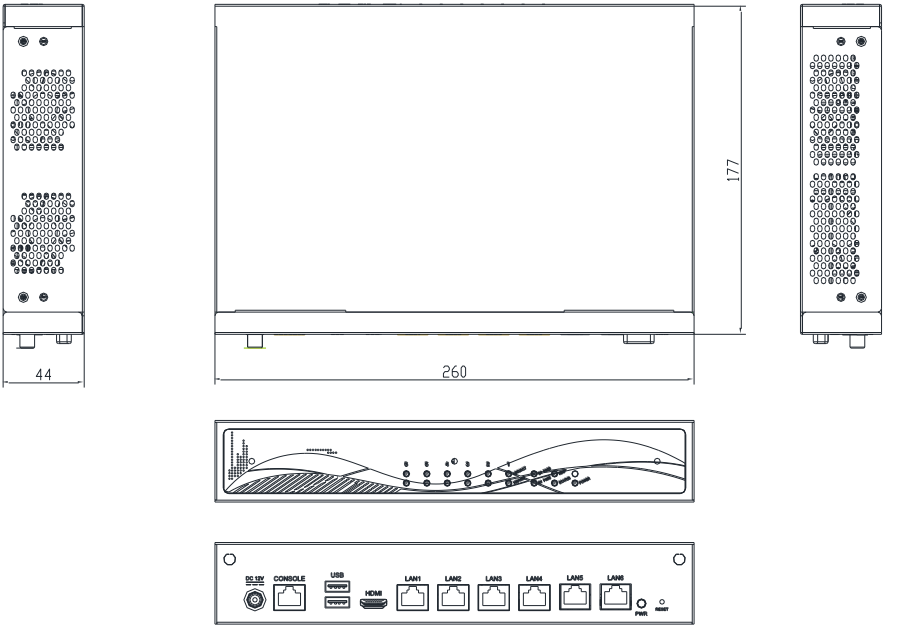
Operating Temperature	0 ~ 40°C (32 ~ 104°F)
Storage Temperature	-20 ~ 60°C (4 ~ 104°F)
Operating Humidity	10 ~ 80% relative humidity, non-condensing
Storage Humidity	10 ~ 80% @ 40°C, non-condensing
Anti-Vibration	0.5 G_{rms}/5~500Hz/ operation (2.5" HDD x 2) 1.5 G_{rms} /5~500Hz/ non-operation
Anti-Shock	10 G peak acceleration (11m sec. duration), operation 20 G peak acceleration (11m sec. duration), non operation

Chapter 2

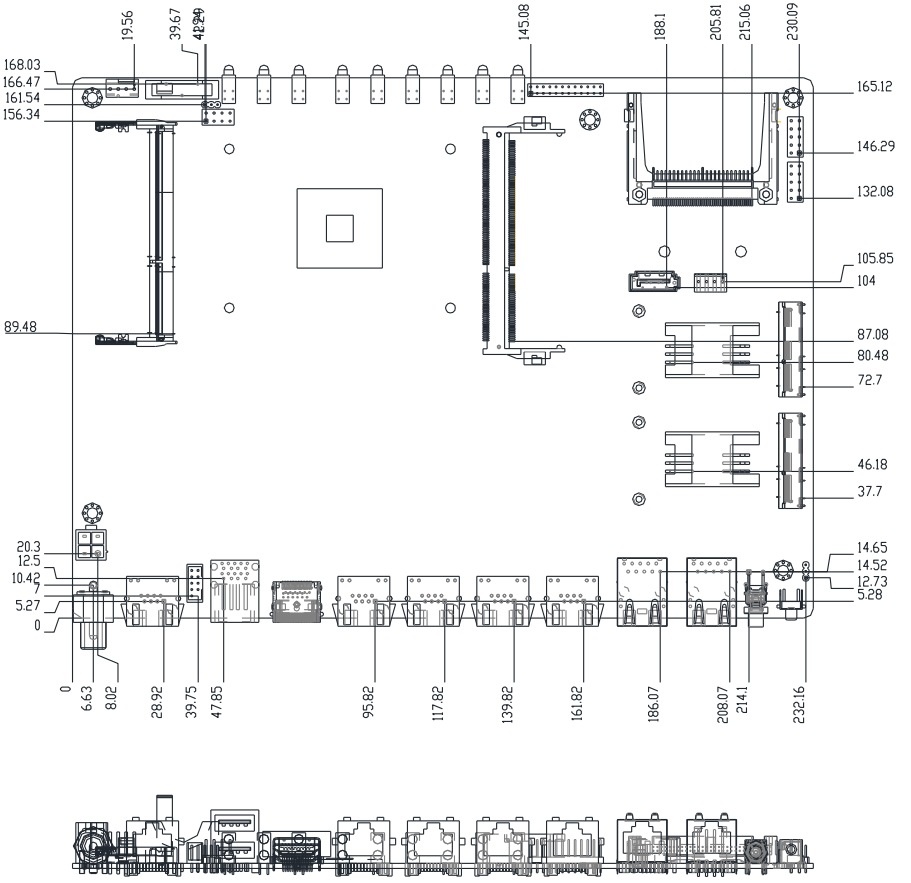
Hardware Information

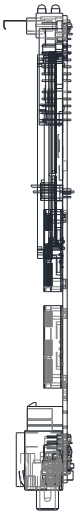
2.1 Dimensions

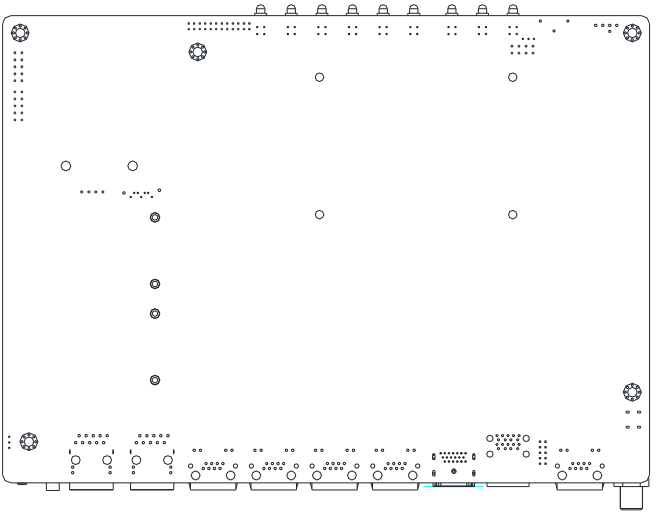
System



Board

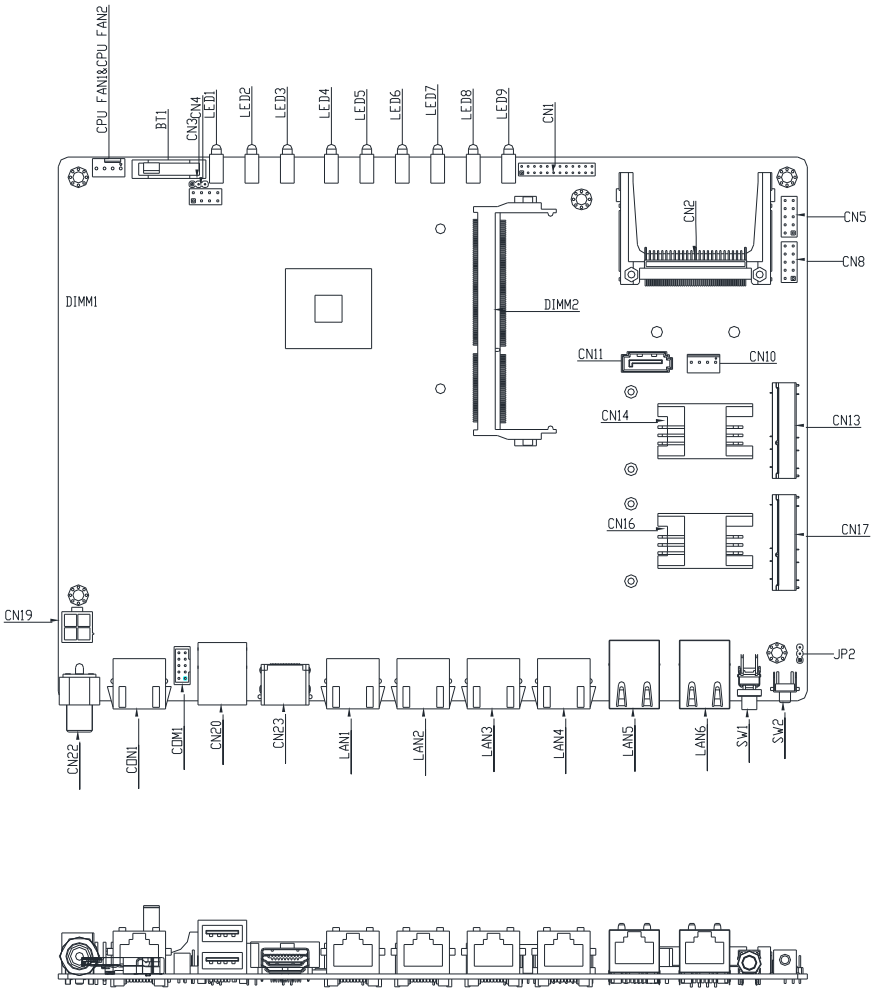

19.56
39.67
145.08
188.1
205.81
215.06
230.09
168.03
166.47
161.54
156.34
165.12
146.29
132.08
105.85
104
89.48
87.08
80.48
72.7
46.18
37.7
20.3
12.5
10.42
7
5.27
0
14.65
14.52
12.73
5.28
0
6.63
8.02
28.92
39.75
47.85
95.82
117.82
139.82
161.82
186.07
208.07
214.1
232.16





2.2 Jumpers and Connectors

Component Side



2.3 List of Jumpers

Please refer to the table below for all of the board's jumpers that you can configure for your application

Label	Function
JP1	CF POWER Selection
JP2	Auto PWRBTN Selection
CN12	CMOS Setting Selection

2.3.1 CF Power Selection (JP1)

Pin	Function
1-2	5V
2-3	3.3V (Default)

2.3.2 Auto PWRBTN Selection (JP2)

Pin	Function
1-2	Disable Auto PWRBTN (Default)
2-3	Enable Auto PWRBTN

2.3.3 CMOS Setting Selection (CN12)

Pin	Function
1-2	Normal (default)
2-3	Clear CMOS

2.4 List of Connectors

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

Label	Function
CN1	LAN LED connector
CN2	mSATA
CN4	Keyboard/ Mouse
CN5	Front Panel connector
CN6	CompactFlash card connector
CN7	CFast card connector
CN8	GPIO
CN9	USB 3.0 port x 1
CN10	SATA power connector
CN11	SATA interface
CN13/CN17	Mini PCIe socket
CN19	4-pin ATX power input
CN20	USB 3.0 port x 2
CN22	DC 12 V in jack
CN23	HDMI
COM1	COM port
CON1	Console port connector
CPU_FAN1	4-pin smart fan
DIMM1	DDR3L SO-DIMM socket
DIMM2	DDR3L SO-DIMM socket

2.4.1 LAN LED Connector (CN1)

Pin	Signal	Pin	Signal
1	L1_ACT#	2	L1_1K
3	L1_ACT	4	L1_100
5	L2_ACT#	6	L2_1K
7	L2_ACT	8	L2_100
9	L3_ACT#	10	L3_1K
11	L3_ACT	12	L3_100
13	L4_ACT#	14	L4_1K
15	L4_ACT	16	L4_100
17	L5_ACT#	18	L5_1K
19	L5_ACT	20	L5_100
21	L6_ACT#	22	L6_1K
23	L6_ACT	24	L6_100

2.4.2 Front Panel Connector (CN5)

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

2.4.3 SATA Power Connector (CN10)

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

2.4.4 Four pin ATX Power Connector (CN19)

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

2.4.5 Console Port Connector (CON1)

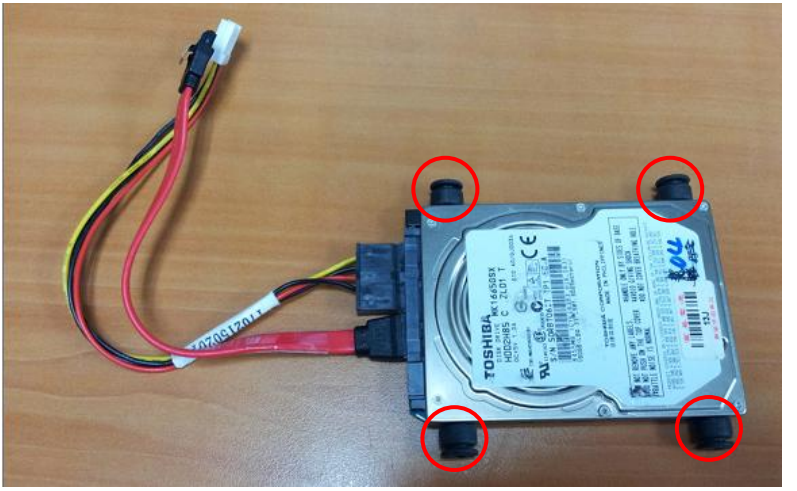
Pin	Signal	Pin	Signal
1	RTS1X	2	DTR1X
3	SOUT1X	4	GND
5	GND	6	SIN1X
7	DSR1X	8	CTS1X

2.5 Hard Disk Drive Installation

1. Remove the cover and take out the HDD case.

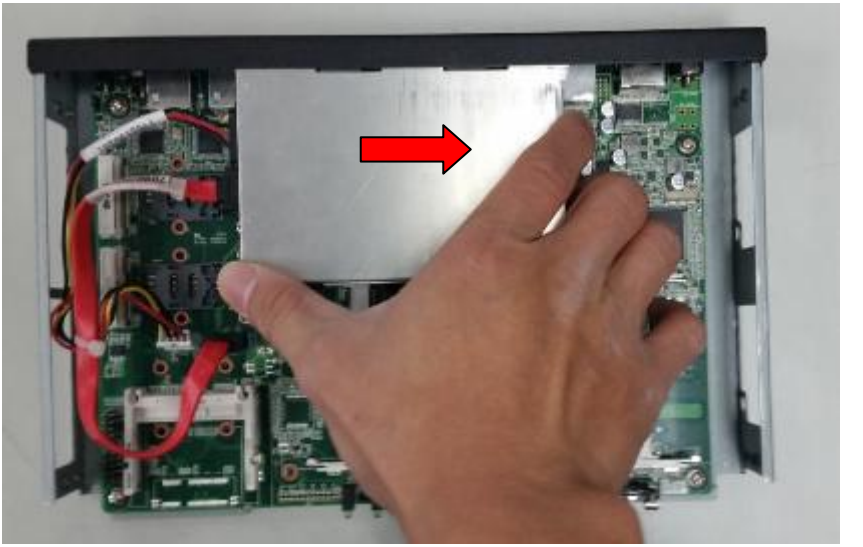
2. Turn the screw to open the case.

3. Attach four screws to the HDD and connect the SATA and power cables.



4. Place the assembled HDD on the HDD bracket and cover the case up. Make use the rubber feet are locked by the flutes on the bracket. Tighten the screw to secure.

5. Slide to secure the HDD to the chassis and connect the cables to the main board.



Chapter 3

AMI BIOS Setup

3.1 System Test and Initialization

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

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

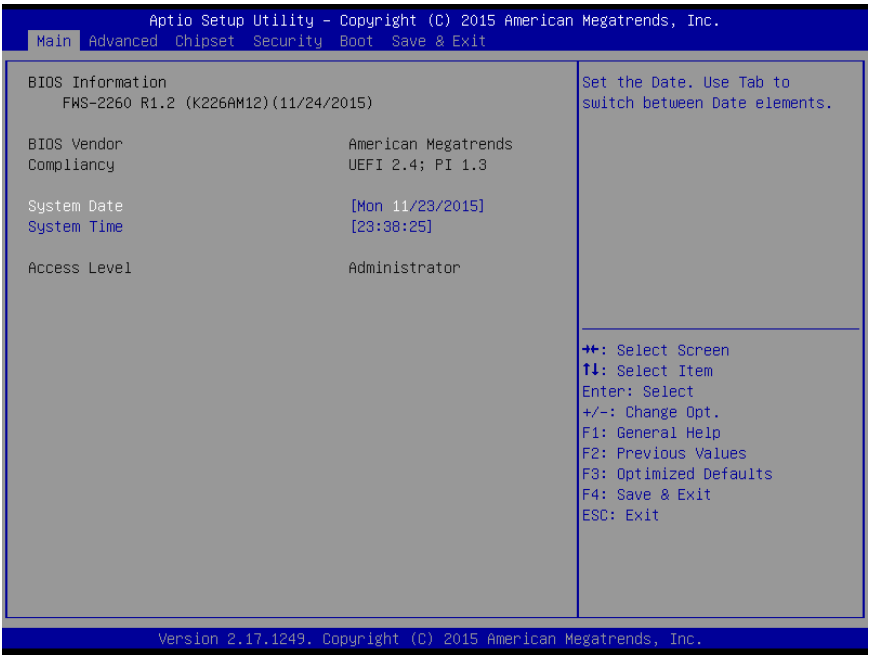
Chipset – For hosting bridge parameters

Boot – Enable/ Disable quiet Boot Option

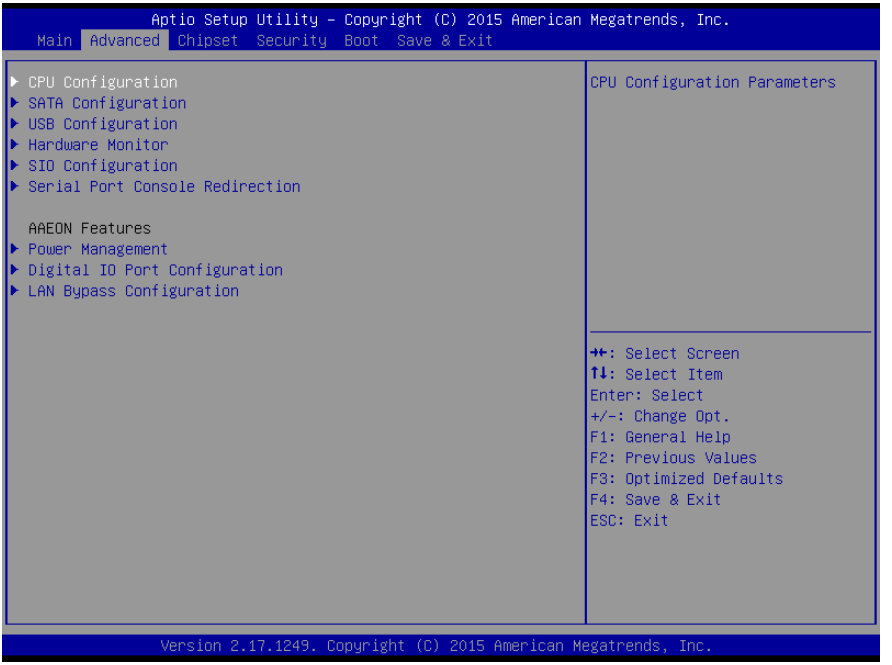
Security – The setup administrator password can be set here

Save & Exit –Save your changes and exit the program

3.3 Setup Submenu: Main



3.4 Setup Submenu: Advanced



3.4.1 Advanced: CPU Configuration

Options summary:

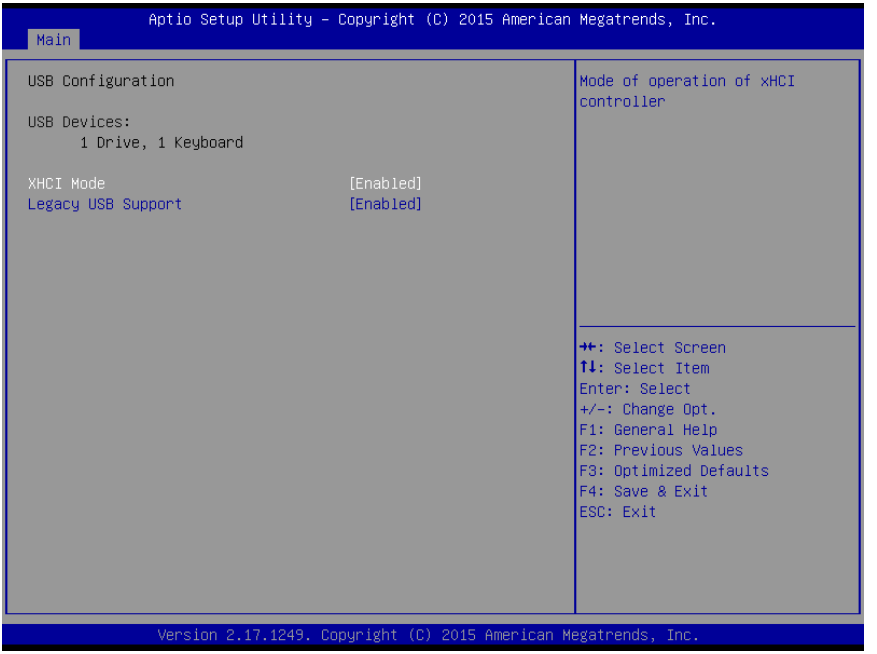
Intel Virtualization Technology	Disabled	Optimal Default, Failsafe Default
	Enabled	
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology		

3.4.2 Advanced: SATA Configuration

Options summary:

SATA Controllers	Disabled Enabled	 Default
En/Disable SATA Controller.		
SATA Mode	AHCI	Default
Configure SATA controllers to operate in AHCI mode		
Hot Plug	Disabled Enabled	 Optimal Default, Failsafe Default
En/Disable Hot Plug feature.		

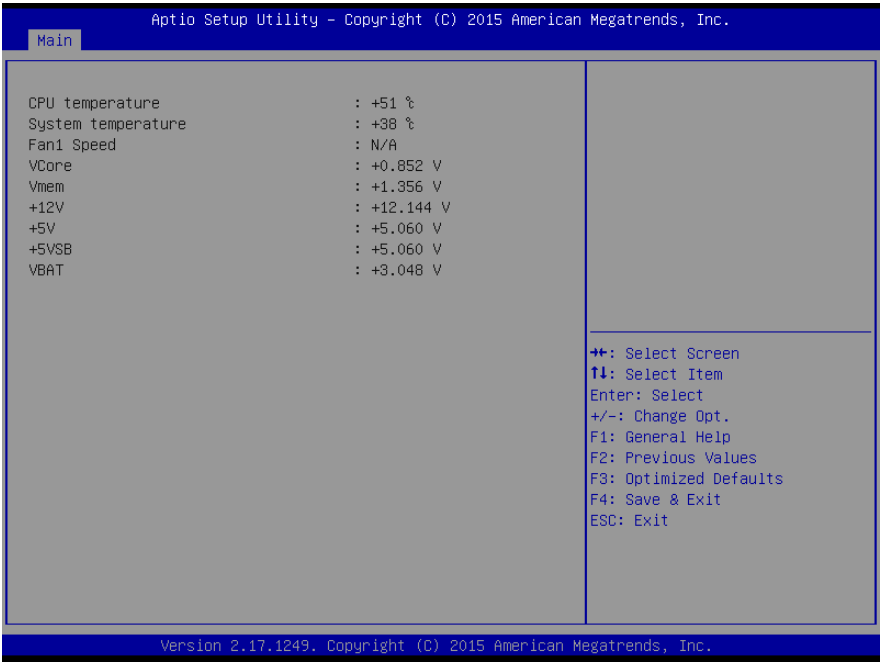
3.4.3 Advanced: USB Configuration



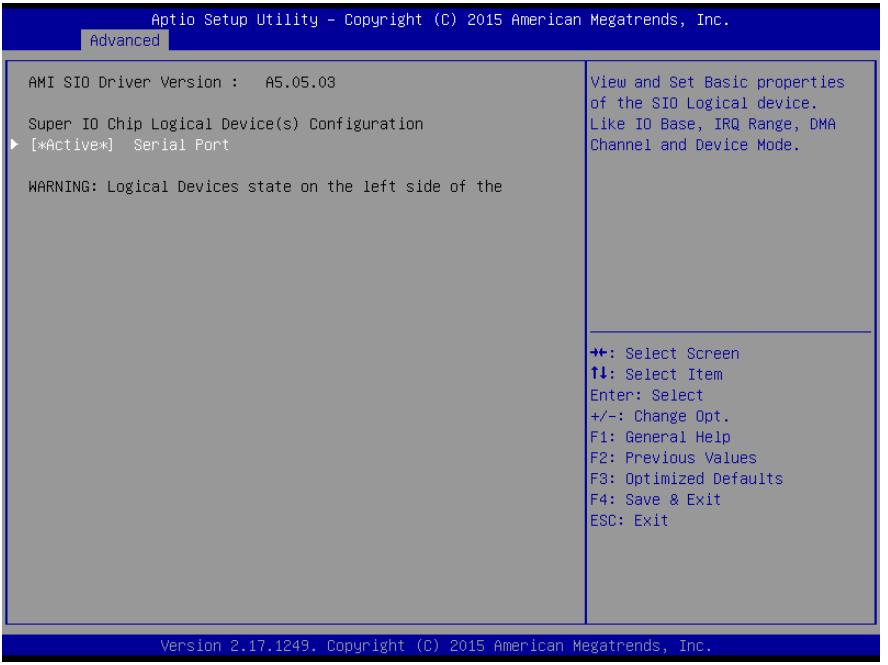
Options summary:

XHCI Mode	Enabled	Optimal Default, Failsafe Default
	Disabled	
Mode of operation of xHCI controller		
Legacy USB Support	Enabled	Optimal Default, Failsafe Default
	Disabled	
	Auto	
Enables BIOS Support for Legacy USB Support. When enabled, USB can be functional in legacy environment like DOS. AUTO option disables legacy support if no USB devices are connected		

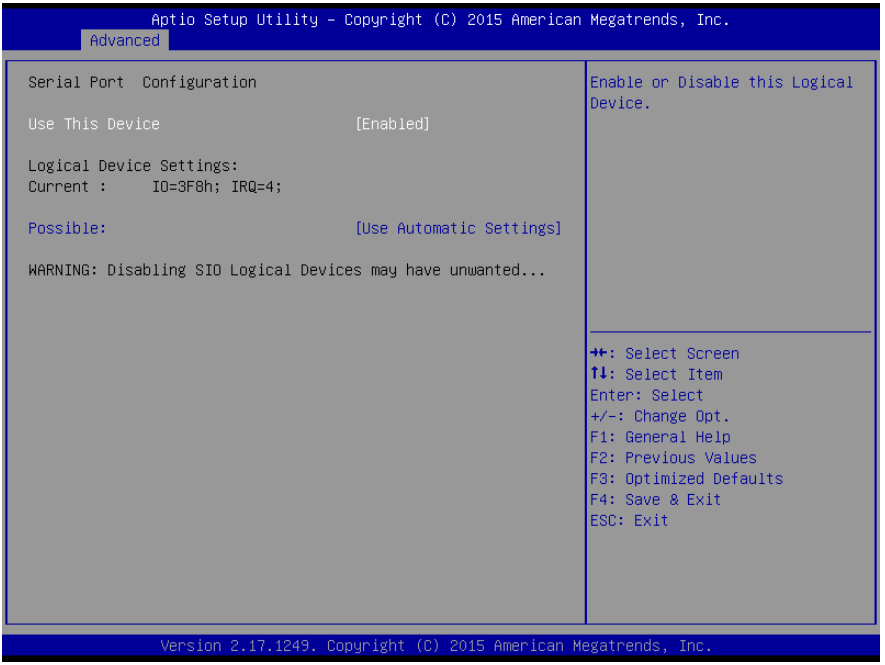
3.4.4 Advanced: Hardware Monitor



3.4.5 Advanced: SIO Configuration



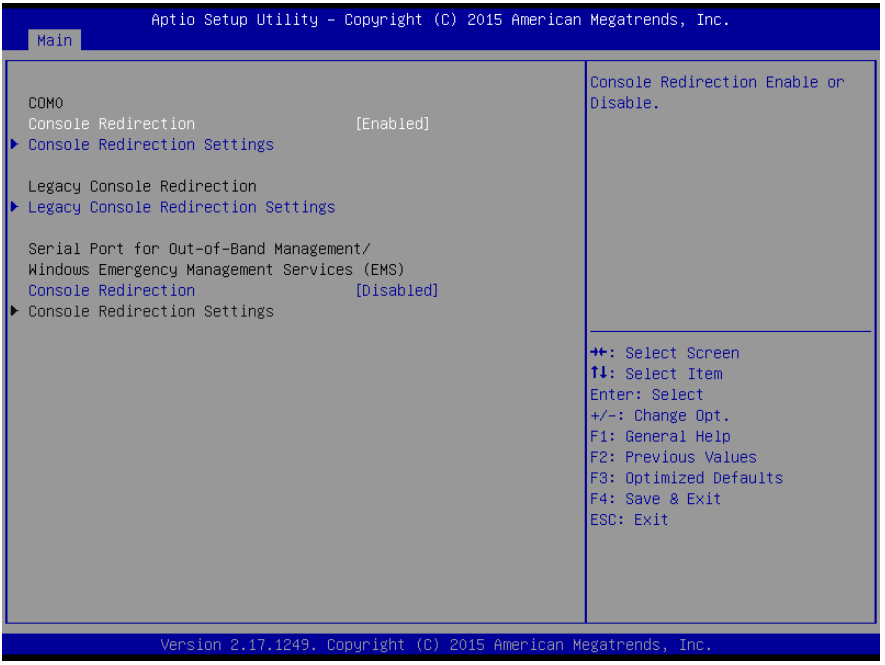
3.4.5.1 SIO Configuration: Serial Port Configuration



Options summary:

Use This Device	Disabled	
	Enabled	Default
Enable or Disable this Logical Device.		
Possible	Use Automatic Settings	Default
	IO=3F8h; IRQ=4;	
	IO=2F8h; IRQ=3'	
Allows user to change Device's Resource settings. New settings will be reflected on This setup Page after system restarts.		

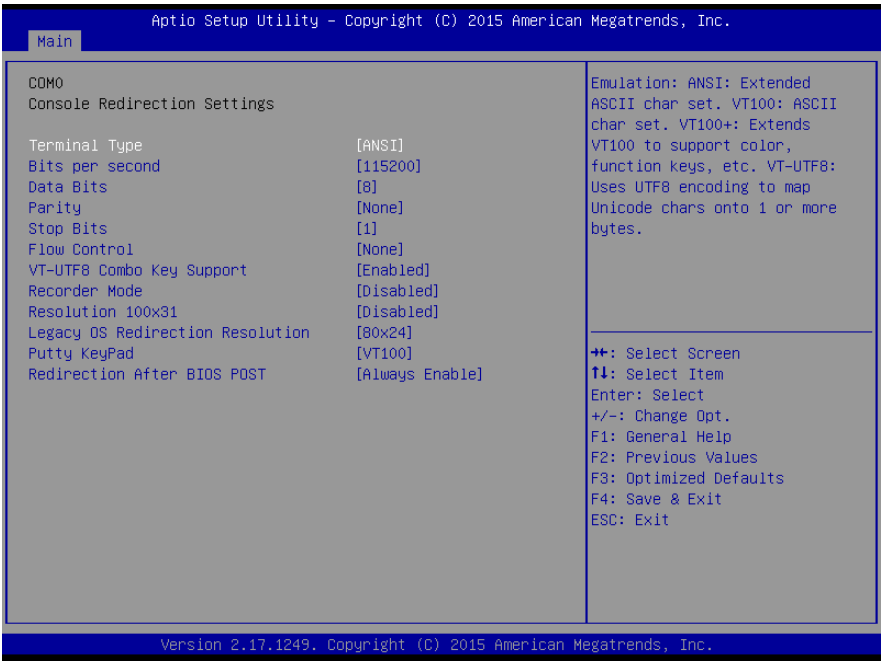
3.4.5.2 Serial Port Config: Serial Port Console Redirection



Options summary:

Console Redirection	Enabled	Default
	Disabled	
Console Redirection Enable or disable.		

3.4.5.3 Serial Port Console Redirection: COM0



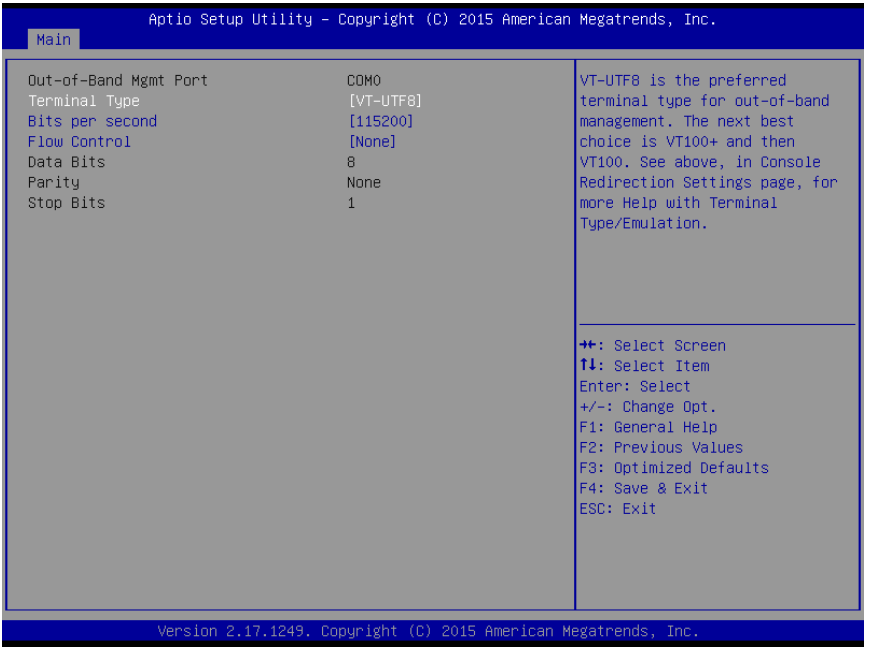
Options summary:

Terminal Type	VT100	
	VT100+	
	VT-UTF8	
	ANSI	Default
Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.		
Bits per second	9600	
	19200	
	38400	
	57600	
	115200	Default
Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.		
Data Bits	7	
	8	Default

Data Bits.		
Parity	None	Default
	Evan	
	Odd	
	Mark	
	Space	
A parity bit can be sent with the data bits to detect some transmission error. Even: parity bit is 0 if the num of 1's in the data bits is even. Odd: parity bit is 0 if num of 1's in the data bits is odd. Mark: parity bit is always 0. Mark and Space Parity do not allow for error detection.		
Stop Bits	1	Default
	2	
Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning.) The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.		
Flow Control	None	Default
	Hardware RTS/CTS	
Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two eires to send start/stop signals.		
VT-UTF8 Combo Key Support	Enabled	Default
	Disabled	
Enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.		
Recorder Mode	Enabled	
	Disabled	Default
With this mode enabled only text will be sent. This is to capture Terminal data.		
Resolution 100x31	Enabled	
	Disabled	Default
Enables or disables extended terminal resolution.		
Legacy OS Redirection Resolution	80x24	Default
	80x25	
On Legacy OS, the Number of Rows and Columns supported redirection.		
Putty KeyPad	VT100	Default
	LINUX	
	XTERMR6	
	SC0	
	ESCN	
	VT400	
Select FunctionKey and KeyPad on Putty.		

Redirection After BIOS POST	Always Enable BoorLoader	Default
The Settings specify if BootLoader is selected then Legacy console redirection is disabled before booting to Legacy OS. Default value is Always Enabled which means Legacy console Redirection is enabled for Legacy OS.		

3.4.5.4 Serial Port Console Redirection: Out-of-Band Management Port

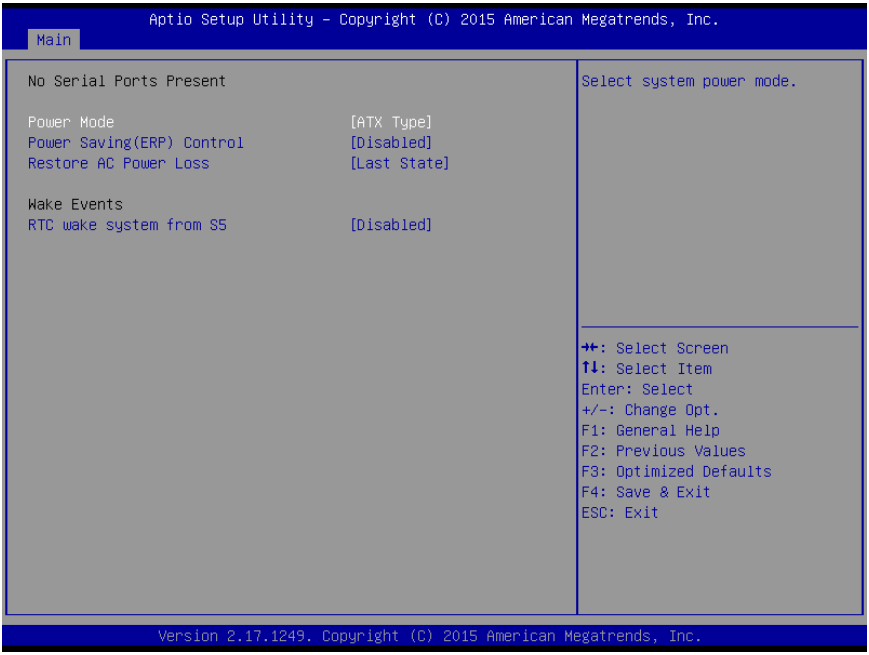


Options summary:

Terminal Type	VT100	
	VT100+	
	VT-UTF8	
	ANSI	Default
VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100. See above, in console Redirection settings page, for more Help with Terminal Type/Emulation.		
Bits per second	9600	
	19200	
	38400	
	57600	
	115200	Default
Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.		
Flow Control	None	Default
	Hardware RTS/CTS	

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two eires to send start/stop signals.

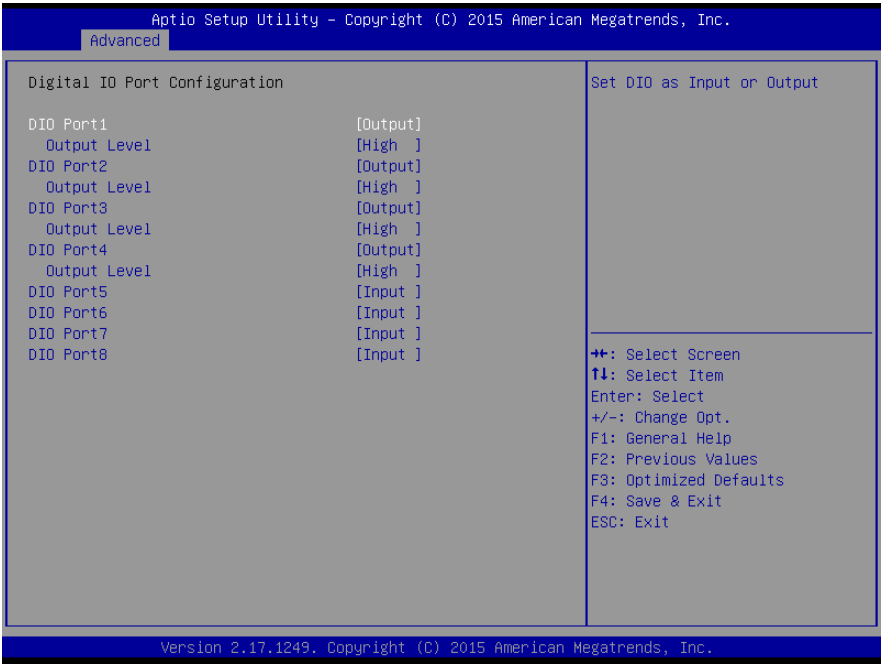
3.4.6 Advanced: Power Management



Options summary:

Power Mode	ATX Type	Default
	AT Type	
Select system power mode.		
Power Saving(ERP) control	Disabled	Default
	Enabled	
Configure power mode for power saving function.		
Restore AC Power Loss	Last State	Default
	Always On	
	Always Off	
RTC wake system from S5	Enabled	
	Disabled	Default
Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified		

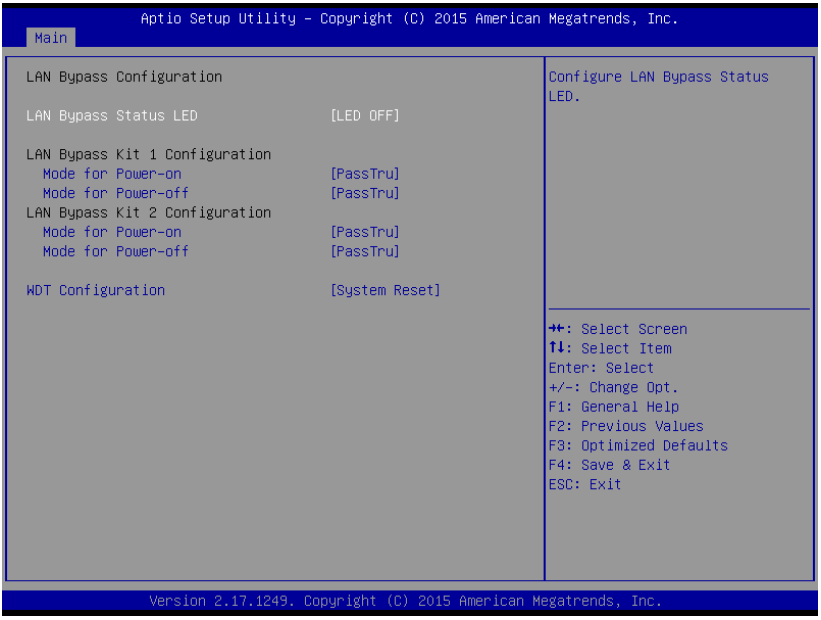
3.4.7 Advanced: Digital I/O Port Configuration



Options summary:

DIO_P#1~4	Input	
	Output	Default
Allows BIOS to select input/output function to corresponding DIO ping.		
DIO_P#1~4 Level	Low	
	High	Default
Allows BIOS to select high/low voltage level to output to corresponding DIO ping.		
DIO_P#5~8	Input	Default
	Output	
Allows BIOS to select input/output function to corresponding DIO ping.		
DIO_P#5~8 Level	Low	
	High	Default
Allows BIOS to select high/low voltage level to output to corresponding DIO ping.		

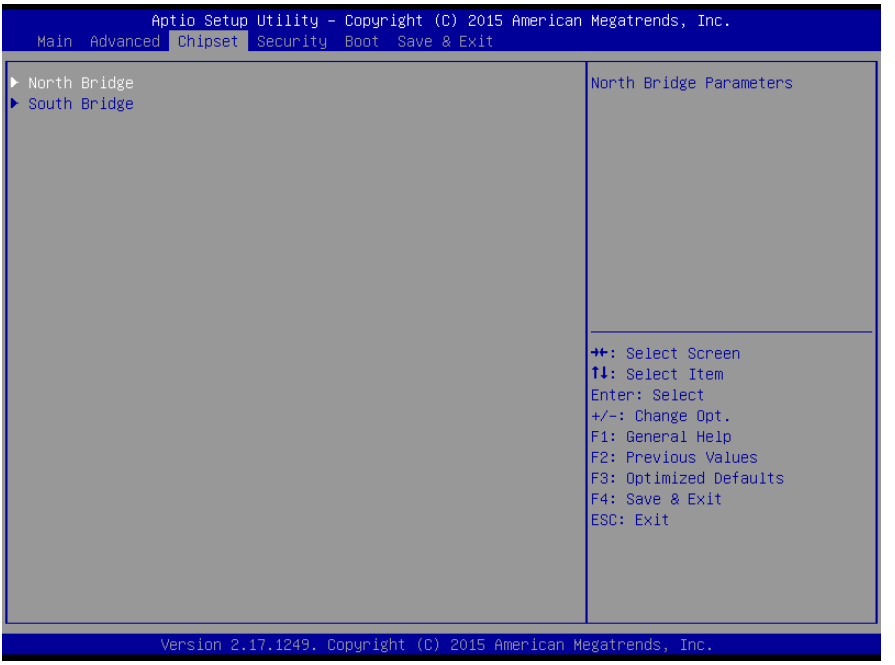
3.4.8 Advanced: LAN Bypass Configuration



Options summary:

LAN Bypass Status LED	LED OFF	Default
	RED LED ON	
	RED LED BLINK	
	RED LED Fast Blink	
	GREEN LED ON	
	GREEN LED BLINK	
	GREEN LED FAST BLINK	
Configure LAN Bypass Status LED.		
Mode for Power-on	PassTru	Default
	ByPass	
Configure LAN kit behavior when system in power-on state. (Bypass/Pass Through)		
Mode for Power-off	PassTru	Default
	ByPass	
Configure LAN kit behavior when system in power-off state. (Bypass/Pass Through)		
WDT Configuration	System Reset	Default
	Force ByPass	
Configure WDT behavior , \nSystem Reset\nForce Bypass		

3.5 Setup submenu: Chipset



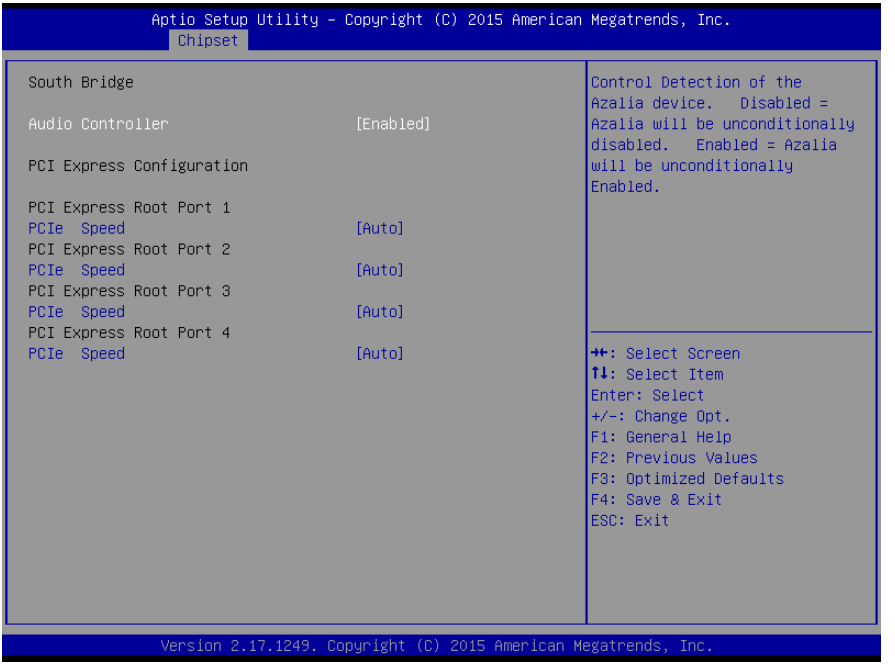
3.5.1 Chipset: North Bridge

Options summary:

DVMT Pre-Allocated	32M	Default
	64M	
	96M	
	128M	
	160M	
	192M	
	224M	
	256M	
	288M	
	320M	
	352M	
	416M	
	448M	
	480M	
	512M	

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.		
DVMT Total Gfx Mem	128MB	Default
	256M	
	Max	
Select DVMT 5.0 Total Graphic Memory size used by the Internal Graphics Device.		

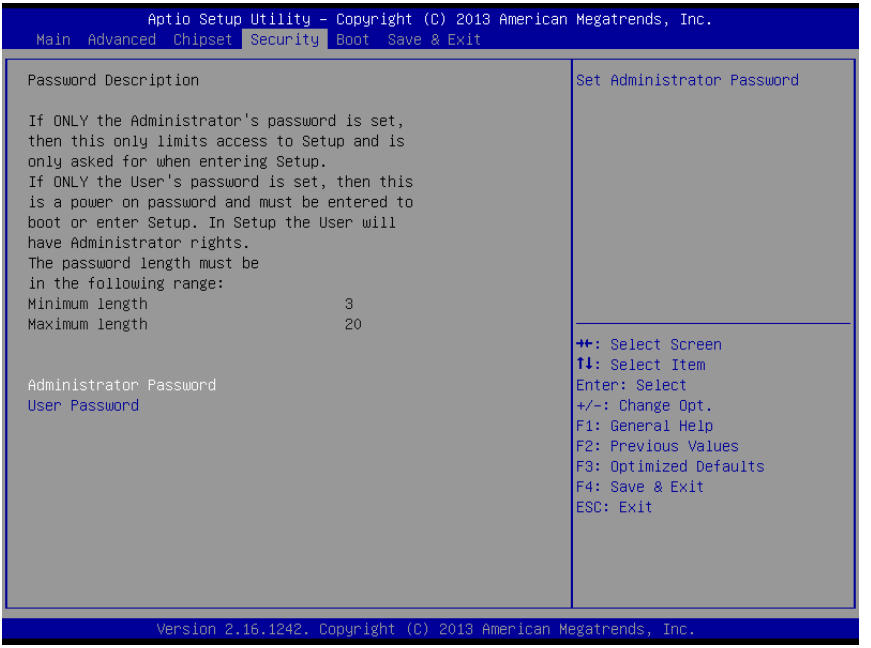
3.5.2 Chipset: South Bridge



Options summary:

Audio Controller	Disabled	
	Enabled	Default
Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled.		
PCIe Speed	Auto	Default
	Gen 2	
	Gen 1	
Configure PCIe Speed. CHV A1 always with Gen1 Speed.		

3.6 Setup submenu: Security



Change User/Administrator Password

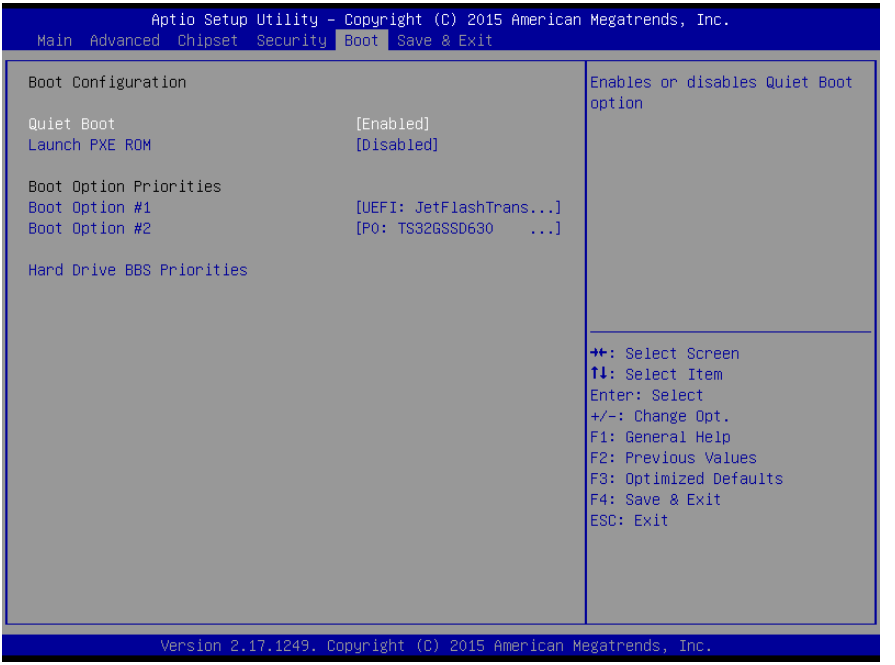
You can set a User Password once an Administrator Password is set. The password will be required during boot up, or when the user enters the Setup utility. Please Note that a User Password does not provide access to many of the features in the Setup utility.

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.

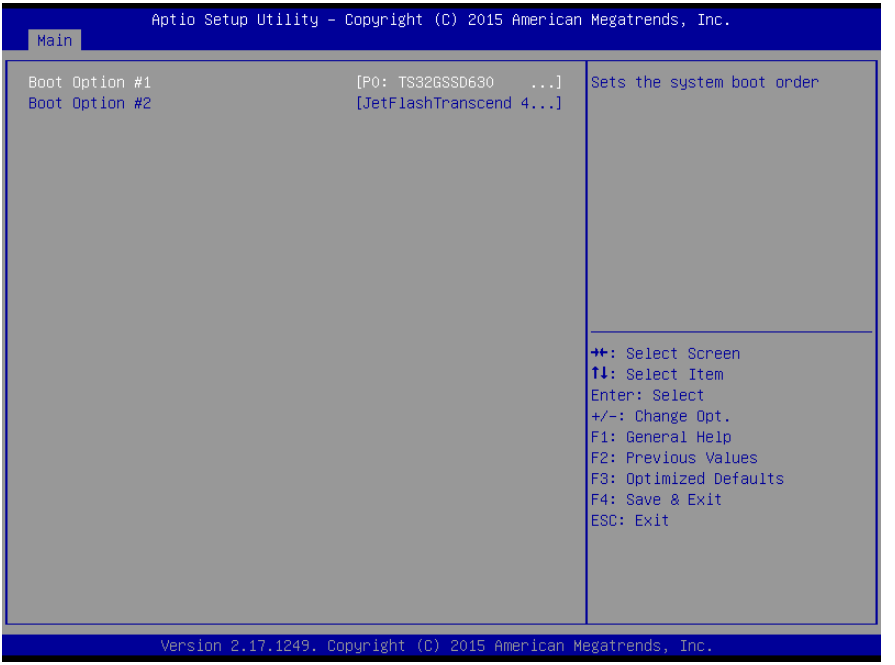
3.7 Setup submenu: Boot



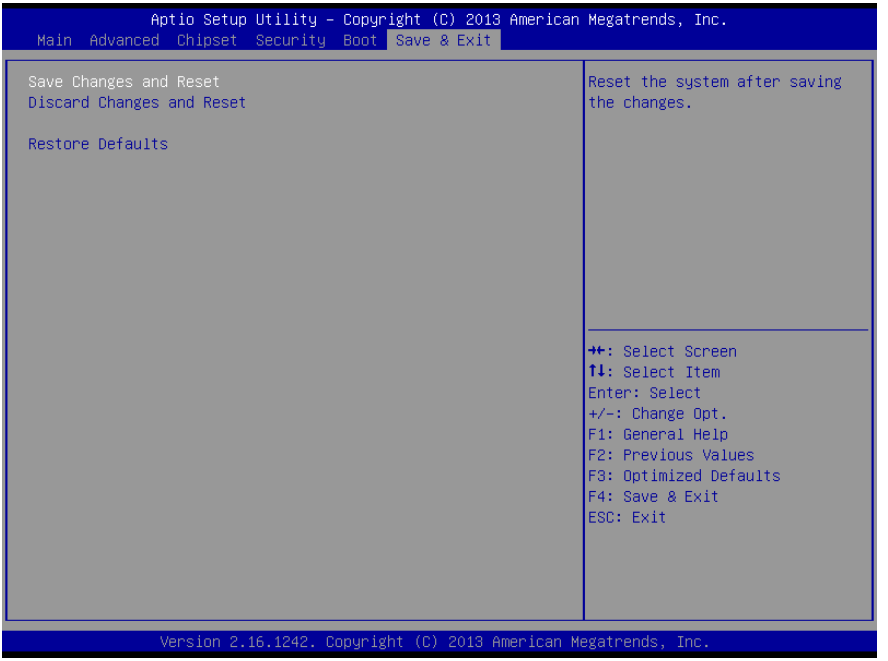
Options summary:

Quiet Boot	Disabled	
	Enabled	Default
Enables or disables Quiet Boot option.		
Launch PXE ROM	Disabled	Default
	Enabled	
Enable/Disable PXE Option ROM execution for onboard LAN.		

3.7.1 Boot: BBS Priorities



3.8 Setup submenu: Exit



Chapter 4

Drivers Installation

4.1 Product CD/DVD

The FWS-2260 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 Drivers

1. Open the **Step 1 - Chipset** folder followed by the **SetupChipset.exe** file
2. Follow the instructions
3. Drivers will be installed automatically

Step 2 – Install Graphics Driver

1. Open the **Step 2 - Graphics** folder followed by **Setup.exe** file
2. Follow the instructions
3. Drivers will be installed automatically

Step 3 – Install Network Driver

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

Step 4 – Install TXE Driver

1. Open the **Step 4 - TXE** folder, then the **Installer** folder
2. Open the **SetupTXE.exe** file in the folder
3. Follow the instructions

4. Drivers will be installed automatically

Step 5 – Install USB 3.0 Driver

1. Open the **Step 5 – USB 3.0** folder and select your OS
2. Open the **.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

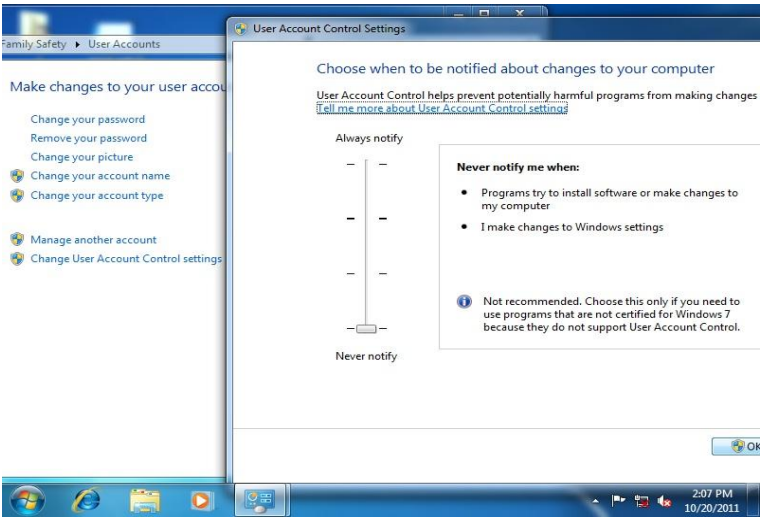
Step 6 – Install Serial I/O Driver

1. Open the **Step 6 – Serial IO** folder
2. Refer to **ReadMe.txt** for installation instructions

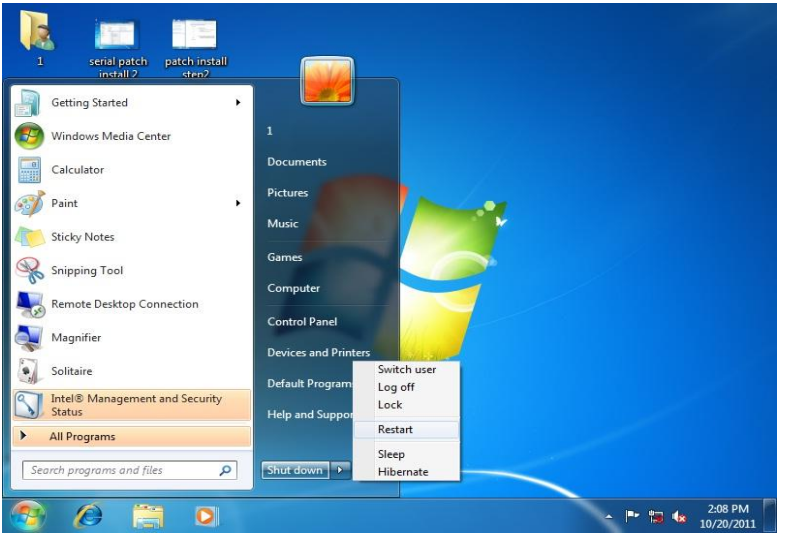
Step 7 – Install Serial Port Driver (Optional)

For Windows 7:

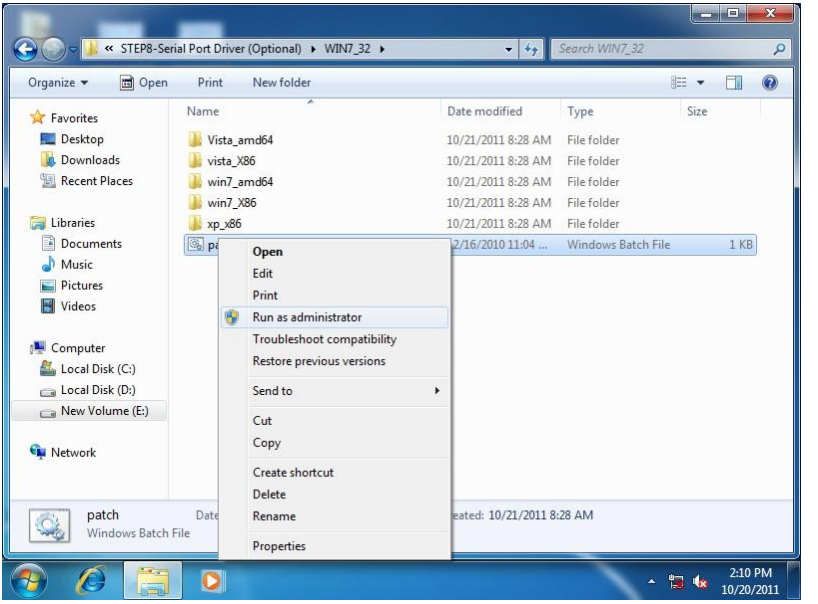
1. Change User Account Control settings to **Never notify**



2. Reboot and log in as administrator

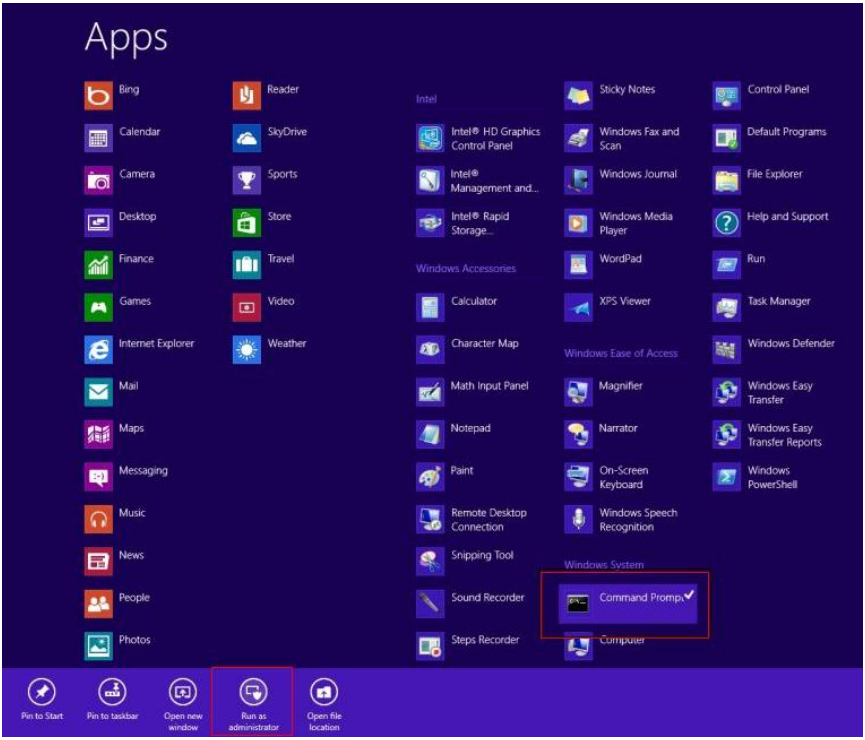


3. Run patch.bat as administrator



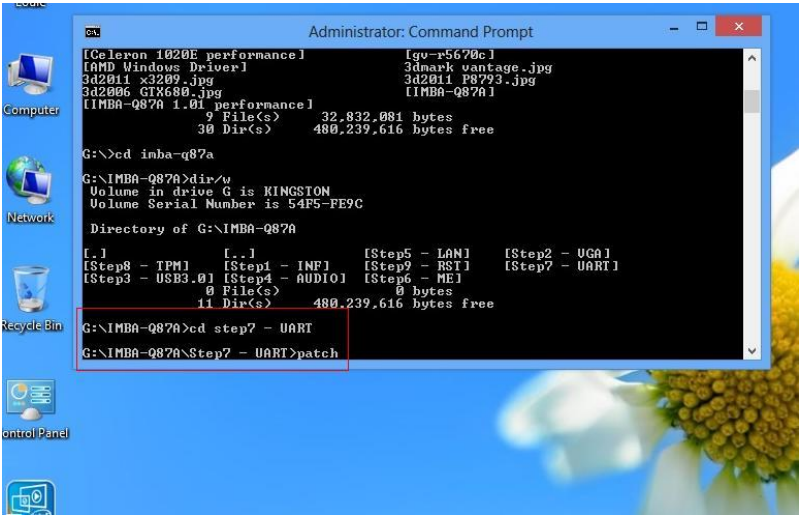
For Windows 8:

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



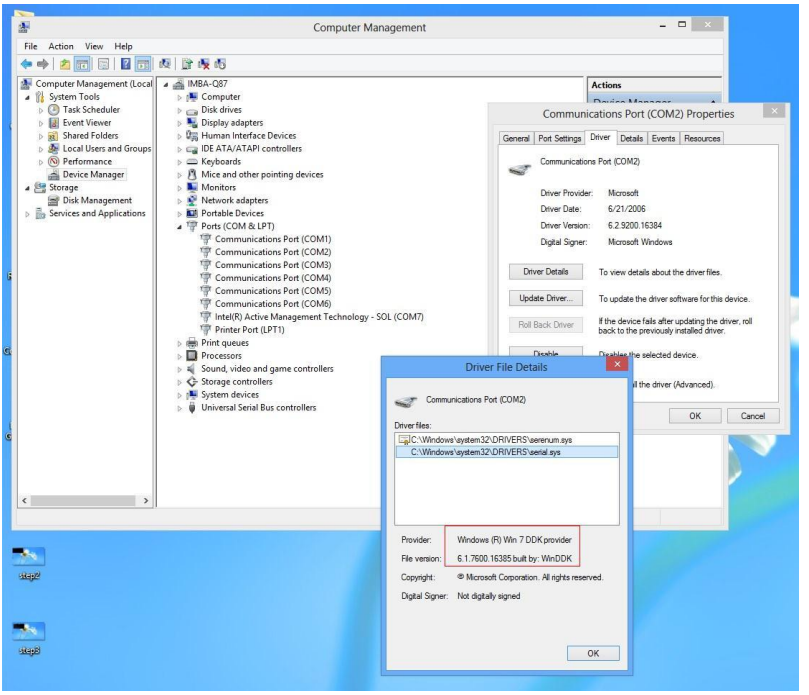
2. To install the driver (patch.bat), you will first have to locate the file in command prompt. To do that, go to the folder in which the file resides by entering **cd (file path)** eg: if the file is in a folder named abc in c drive, enter cd c:\abc (screenshot for reference only)

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**.


Computer Management
File Action View Help
Computer Management (Local
System Tools
Task Scheduler
Event Viewer
Shared Folders
Local Users and Groups
Performance
Device Manager
Storage
Disk Management
Services and Applications
IMBA-Q87
Computer
Disk drives
Display adapters
Human Interface Devices
IDE ATA/ATAPI controllers
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Portable Devices
Ports (COM & LPT)
Communications Port (COM1)
Communications Port (COM2)
Communications Port (COM3)
Communications Port (COM4)
Communications Port (COM5)
Communications Port (COM6)
Intel(R) Active Management Technology - SOL (COM7)
Printer Port (LPT1)
Print queues
Processors
Sound, video and game controllers
Storage controllers
System devices
Universal Serial Bus controllers
Actions
Communications Port (COM2) Properties
General Port Settings Driver Details Events Resources
Communications Port (COM2)
Driver Provider: Microsoft
Driver Date: 6/21/2006
Driver Version: 6.2.9200.16384
Digital Signer: Microsoft Windows
Driver Details
To view details about the driver files.
Update Driver...
To update the driver software for this device.
Roll Back Driver
If the device fails after updating the driver, roll back to the previously installed driver.
Disable
Disables the selected device.
Uninstall
To uninstall the driver (Advanced).
OK
Cancel
Driver File Details
Communications Port (COM2)
Driver files:
C:\Windows\system32\DRIVERS\serenum.sys
C:\Windows\system32\DRIVERS\serial.sys
Provider: Windows (R) Win 7 DDK provider
File version: 6.1.7600.16385 built by: WinDDK
Copyright: © Microsoft Corporation. All rights reserved.
Digital Signer: Not digitally signed
OK

Appendix A

Watchdog Timer Programming

A.1 Watchdog Timer Initial Program

Table 1 : SuperIO relative register table		
	Default Value	Note
Index	0x2E(Note1)	SIO MB PnP Mode Index Register 0x2E or 0x4E
Data	0x2F(Note2)	SIO MB PnP Mode Data Register 0x2F or 0x4F

Table 2 : Watchdog relative register table					
	LDN	Register	BitNum	Value	Note
Timer Counter	0x07(Note3)	0x73(Note4)		(Note24)	Time of watchdog timer (0~255) This register is byte access
Counting Unit	0x07(Note5)	0x72(Note6)	7(Note7)	1(Note8)	Select time unit. 1: second 0: minute
Watchdog Enable (KRST)	0x07(Note9)	0x72(Note10)	6(Note11)	1(Note12)	0: Disable 1: Enable
Timeout Status	0x07(Note13)	0x71(Note14)	0(Note15)	1	1: Clear timeout status

```
*********************************************************************************
// SuperIO relative definition (Please reference to Table 1)
#define byte   SIOIndex   //This parameter is represented from Note1
#define byte   SIOData    //This parameter is represented from Note2
#define   void   IOWriteByte(byte IOPort, byte Value);
#define   byte   IOReadByte(byte IOPort);
// Watch Dog relative definition (Please reference to Table 2)
#define byte   TimerLDN   //This parameter is represented from Note3
#define byte   TimerReg   //This parameter is represented from Note4
#define byte   TimerVal   // This parameter is represented from Note24
#define byte   UnitLDN    //This parameter is represented from Note5
#define byte   UnitReg    //This parameter is represented from Note6
#define byte   UnitBit    //This parameter is represented from Note7
#define byte   UnitVal    //This parameter is represented from Note8
#define byte   EnableLDN   //This parameter is represented from Note9
#define byte   EnableReg   //This parameter is represented from Note10
#define byte   EnableBit   //This parameter is represented from Note11
#define byte   EnableVal   //This parameter is represented from Note12
#define byte   StatusLDN   // This parameter is represented from Note13
#define byte   StatusReg   // This parameter is represented from Note14
#define byte   StatusBit   // This parameter is represented from Note15
*********************************************************************************
```

```
*********************************************************************************
VOID   Main(){
       // Procedure : AaeonWDTConfig
       // (byte)Timer : Time of WDT timer.(0x00~0xFF)
       // (boolean)Unit : Select time unit(0: second, 1: minute).
       AaeonWDTConfig();

       // Procedure : AaeonWDTEnable
        // This procudure will enable the WDT counting.
       AaeonWDTEnable();
}
*********************************************************************************
```

```
*********************************************************************************
// Procedure : AaeonWDTEnable
VOID    AaeonWDTEnable ( ){
        WDTEnableDisable(EnableLDN, EnableReg, EnableBit, 1);
}

// Procedure : AaeonWDTConfig
VOID    AaeonWDTConfig ( ){
         // Disable WDT counting
         WDTEnableDisable(EnableLDN, EnableReg, EnableBit, 0);
         // Clear Watchdog Timeout Status
         WDTClearTimeoutStatus();
         // WDT relative parameter setting
         WDTParameterSetting();
}

VOID    WDTEnableDisable(byte LDN, byte Register, byte BitNum, byte Value){
       SIOBitSet(LDN, Register, BitNum, Value);
}

VOID    WDTParameterSetting(){
         // Watchdog Timer counter setting
        SIOByteSet(TimerLDN, TimerReg, TimerVal);
       // WDT counting unit setting
       SIOBitSet(UnitLDN, UnitReg, UnitBit, UnitVal);
}

VOID    WDTClearTimeoutStatus(){
       SIOBitSet(StatusLDN, StatusReg, StatusBit, 1);
}
*********************************************************************************
```

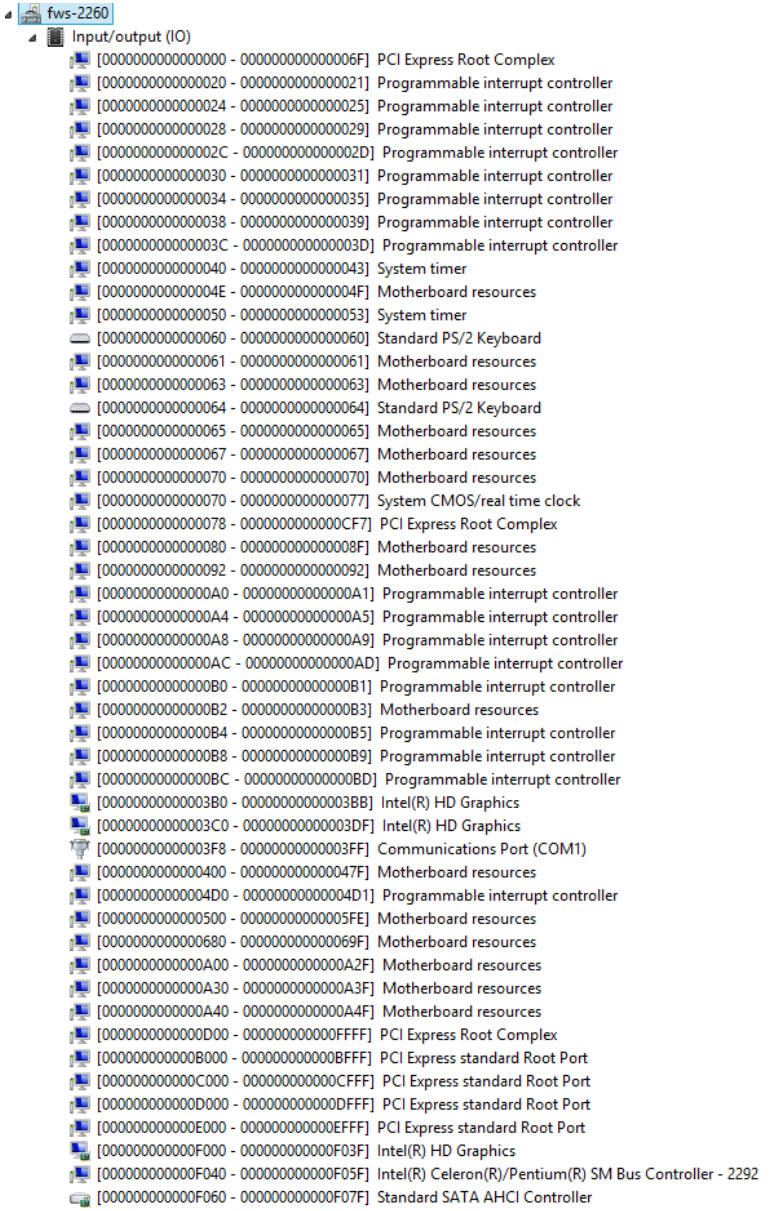
```
*******************************************************************************
VOID    SIOEnterMBPnPMode(){
        Switch(SIOIndex){
                Case 0x2E:
                        IOWriteByte(SIOIndex, 0x87);
                        IOWriteByte(SIOIndex, 0x01);
                           IOWriteByte(SIOIndex, 0x55);
                           IOWriteByte(SIOIndex, 0x55);
                           Break;
                Case 0x4E:
                        IOWriteByte(SIOIndex, 0x87);
                        IOWriteByte(SIOIndex, 0x01);
                           IOWriteByte(SIOIndex, 0x55);
                           IOWriteByte(SIOIndex, 0xAA);
                        Break;
        }
}

VOID    SIOExitMBPnPMode(){
        IOWriteByte(SIOIndex, 0x02);
        IOWriteByte(SIOData, 0x02);
}

VOID    SIOSelectLDN(byte LDN){
         IOWriteByte(SIOIndex, 0x07); // SIO LDN Register Offset = 0x07
        IOWriteByte(SIOData, LDN);
}
*******************************************************************************
```

```
*****************************************************************************
VOID   SIOBitSet(byte LDN, byte Register, byte BitNum, byte Value){
       Byte TmpValue;

       SIOEnterMBPnPMode();
        SIOSelectLDN(byte LDN);
       IOWriteByte(SIOIndex, Register);
       TmpValue = IOReadByte(SIOData);
       TmpValue &= ~(1 << BitNum);
       TmpValue |= (Value << BitNum);
       IOWriteByte(SIOData, TmpValue);
       SIOExitMBPnPMode();
}

VOID   SIOByteSet(byte LDN, byte Register, byte Value){
       SIOEnterMBPnPMode();
        SIOSelectLDN(LDN);
       IOWriteByte(SIOIndex, Register);
        IOWriteByte(SIOData, Value);
        SIOExitMBPnPMode();
}
*****************************************************************************
```

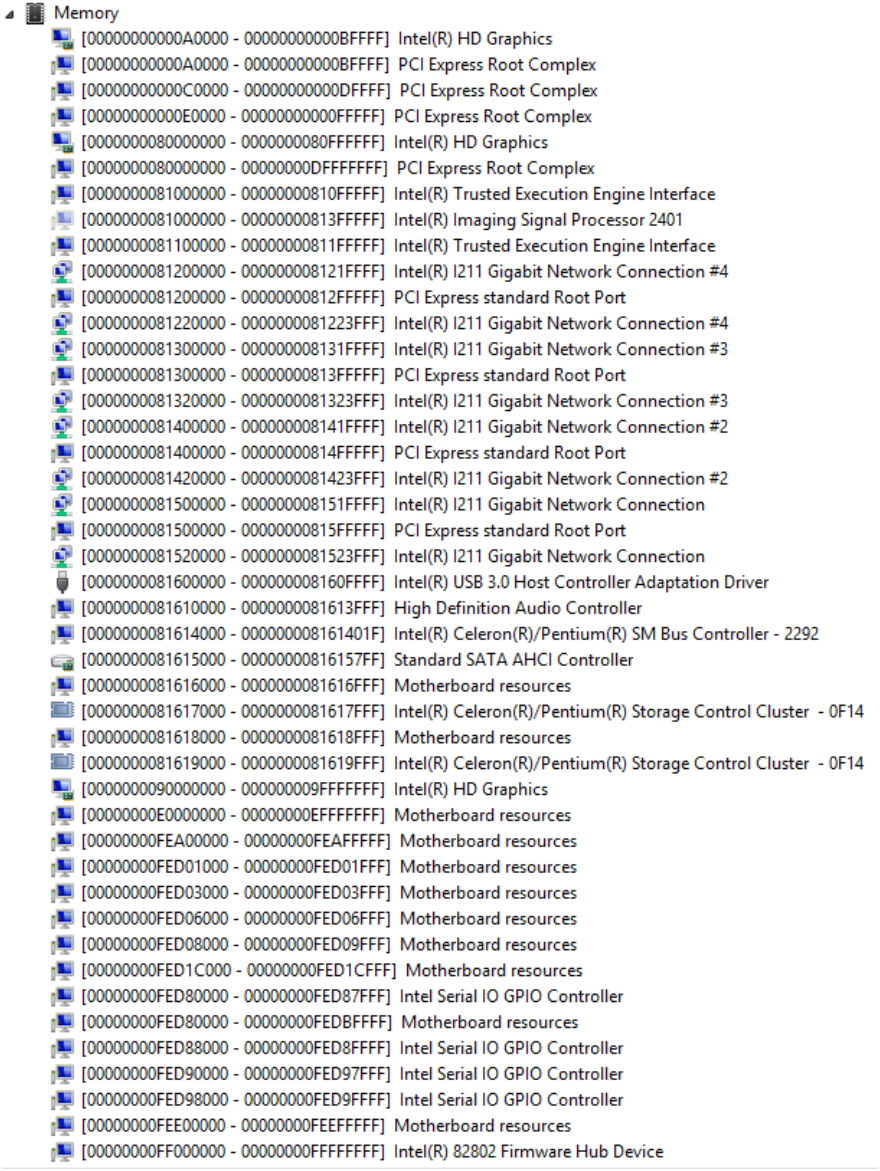
Appendix B

I/O Information

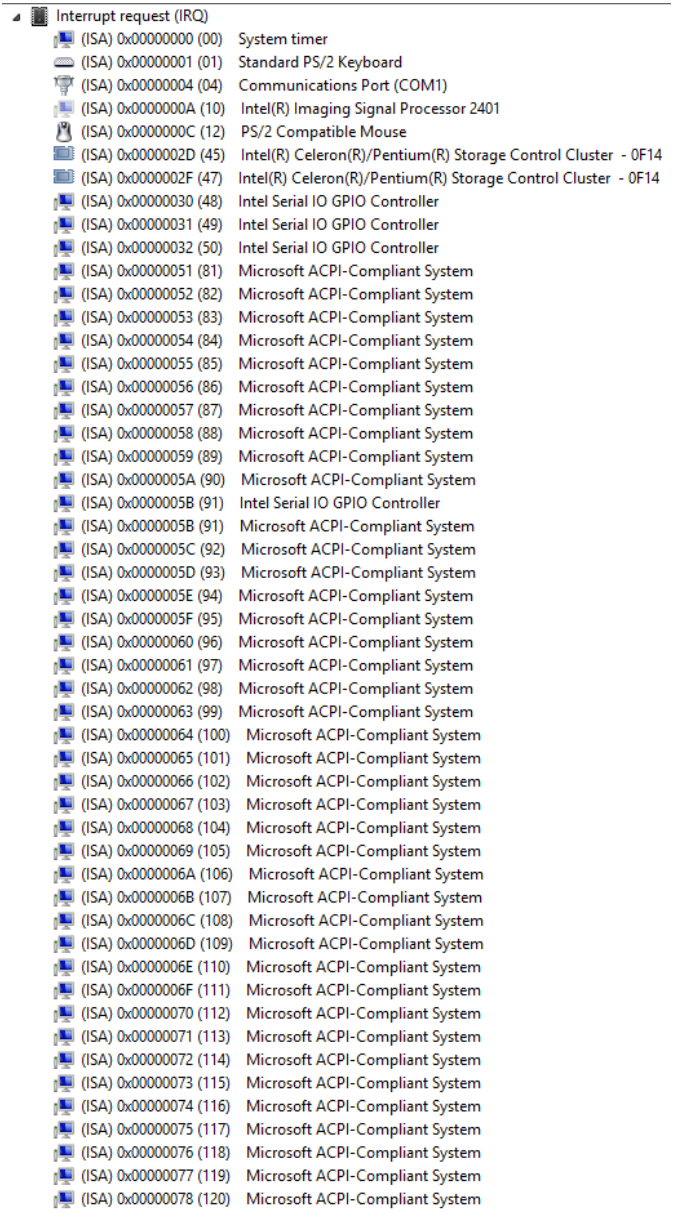
B.1 I/O Address Map



B.2 Memory Address Map

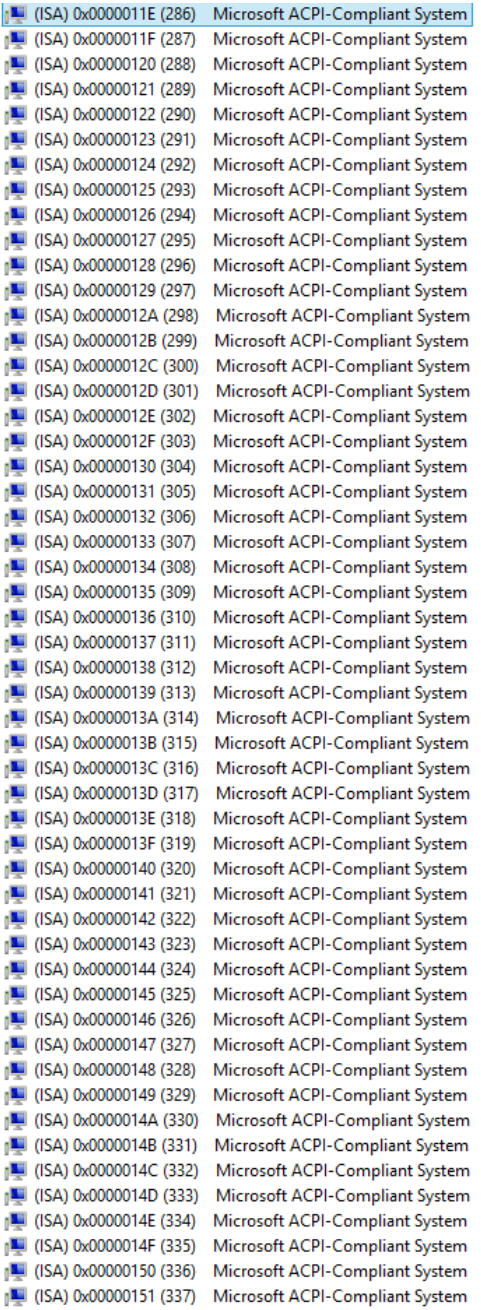


B.3 IRQ Mapping Chart



(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) 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
(ISA) 0x000000BF (191)	Microsoft ACPI-Compliant System
(ISA) 0x00000100 (256)	Microsoft ACPI-Compliant System
(ISA) 0x00000101 (257)	Microsoft ACPI-Compliant System
(ISA) 0x00000102 (258)	Microsoft ACPI-Compliant System
(ISA) 0x00000103 (259)	Microsoft ACPI-Compliant System
(ISA) 0x00000104 (260)	Microsoft ACPI-Compliant System
(ISA) 0x00000105 (261)	Microsoft ACPI-Compliant System
(ISA) 0x00000106 (262)	Microsoft ACPI-Compliant System
(ISA) 0x00000107 (263)	Microsoft ACPI-Compliant System
(ISA) 0x00000108 (264)	Microsoft ACPI-Compliant System
(ISA) 0x00000109 (265)	Microsoft ACPI-Compliant System
(ISA) 0x0000010A (266)	Microsoft ACPI-Compliant System
(ISA) 0x0000010B (267)	Microsoft ACPI-Compliant System
(ISA) 0x0000010C (268)	Microsoft ACPI-Compliant System
(ISA) 0x0000010D (269)	Microsoft ACPI-Compliant System
(ISA) 0x0000010E (270)	Microsoft ACPI-Compliant System
(ISA) 0x0000010F (271)	Microsoft ACPI-Compliant System
(ISA) 0x00000110 (272)	Microsoft ACPI-Compliant System
(ISA) 0x00000111 (273)	Microsoft ACPI-Compliant System
(ISA) 0x00000112 (274)	Microsoft ACPI-Compliant System
(ISA) 0x00000113 (275)	Microsoft ACPI-Compliant System
(ISA) 0x00000114 (276)	Microsoft ACPI-Compliant System
(ISA) 0x00000115 (277)	Microsoft ACPI-Compliant System
(ISA) 0x00000116 (278)	Microsoft ACPI-Compliant System
(ISA) 0x00000117 (279)	Microsoft ACPI-Compliant System
(ISA) 0x00000118 (280)	Microsoft ACPI-Compliant System
(ISA) 0x00000119 (281)	Microsoft ACPI-Compliant System
(ISA) 0x0000011A (282)	Microsoft ACPI-Compliant System
(ISA) 0x0000011B (283)	Microsoft ACPI-Compliant System
(ISA) 0x0000011C (284)	Microsoft ACPI-Compliant System
(ISA) 0x0000011D (285)	Microsoft ACPI-Compliant System
(ISA) 0x0000011E (286)	Microsoft ACPI-Compliant System


(ISA) 0x0000011E (286) Microsoft ACPI-Compliant System
(ISA) 0x0000011F (287) Microsoft ACPI-Compliant System
(ISA) 0x00000120 (288) Microsoft ACPI-Compliant System
(ISA) 0x00000121 (289) Microsoft ACPI-Compliant System
(ISA) 0x00000122 (290) Microsoft ACPI-Compliant System
(ISA) 0x00000123 (291) Microsoft ACPI-Compliant System
(ISA) 0x00000124 (292) Microsoft ACPI-Compliant System
(ISA) 0x00000125 (293) Microsoft ACPI-Compliant System
(ISA) 0x00000126 (294) Microsoft ACPI-Compliant System
(ISA) 0x00000127 (295) Microsoft ACPI-Compliant System
(ISA) 0x00000128 (296) Microsoft ACPI-Compliant System
(ISA) 0x00000129 (297) Microsoft ACPI-Compliant System
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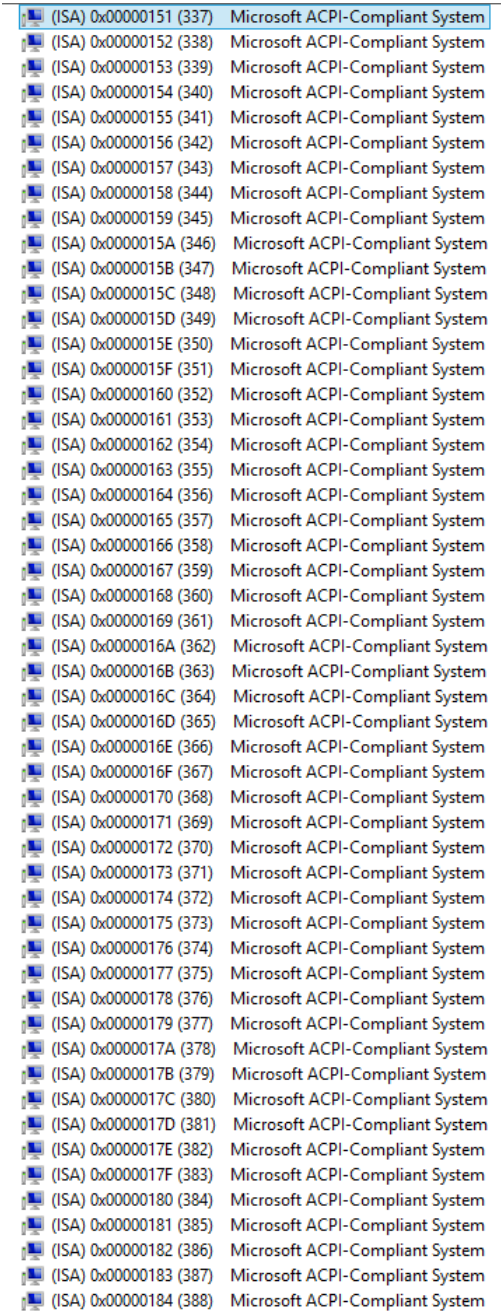
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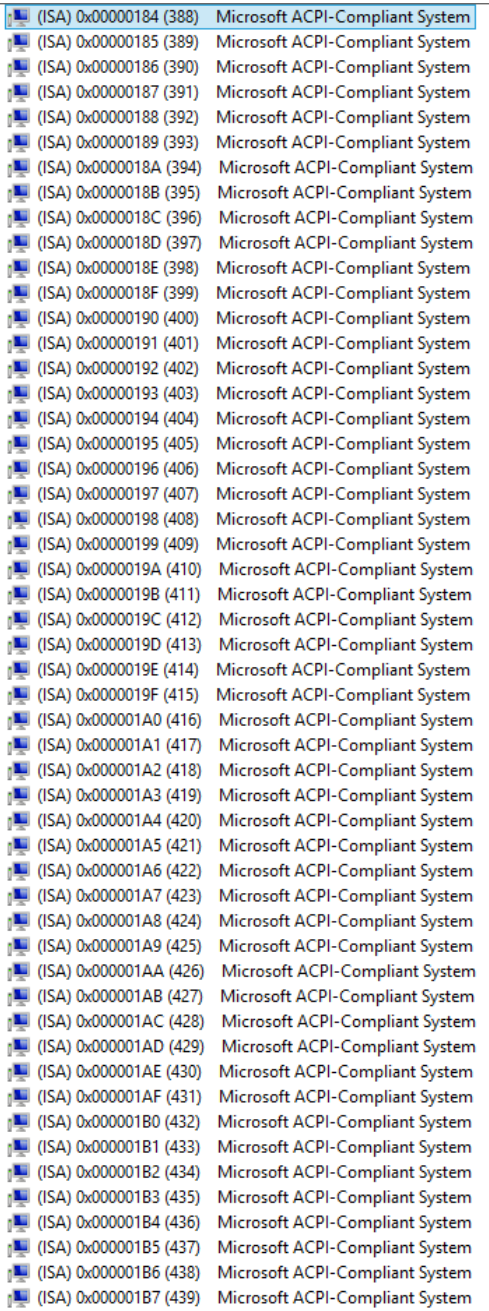
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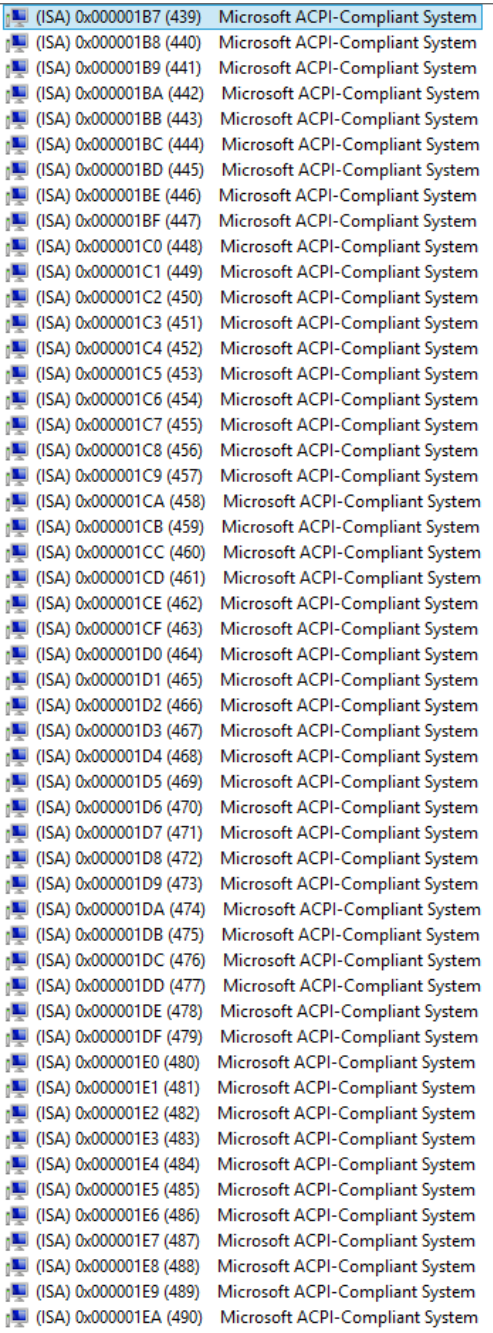

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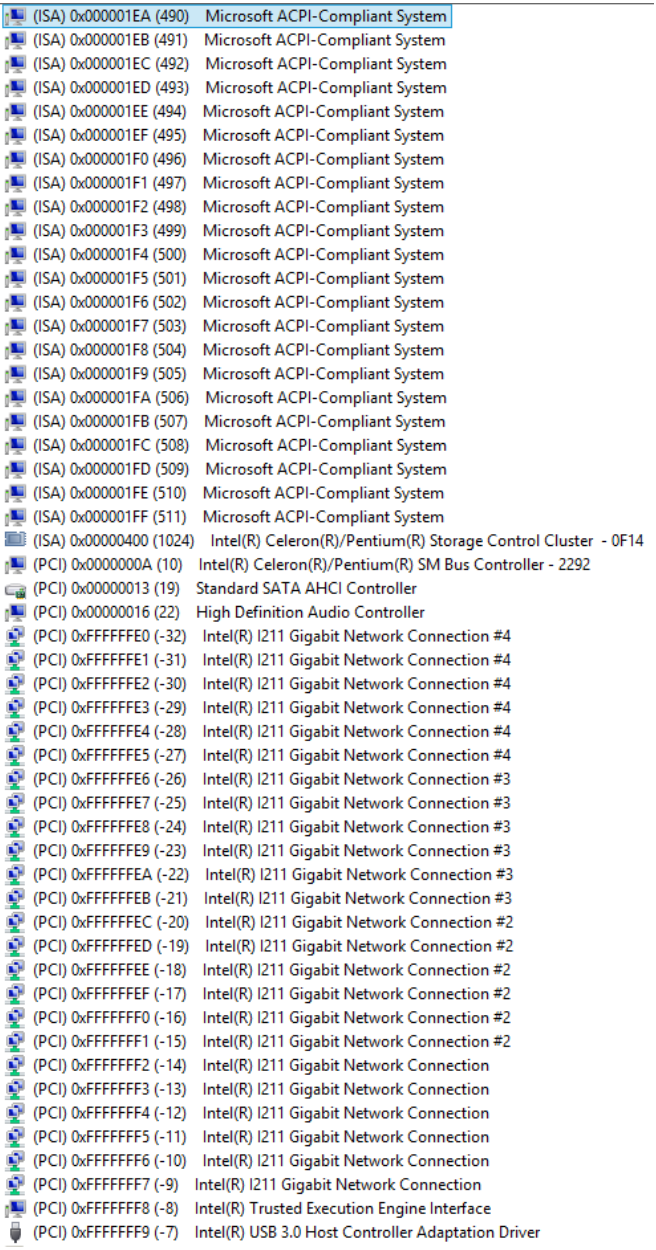
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(PCI) 0x00000016 (22) High Definition Audio Controller
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