AHP-2176

Onboard Intel® Celeron® 827E
1.4GHz Processor
Touch Panel PC
With 17" TFT LCD

AHP-2176 Manual 3rd Ed.
April 30, 2014

Copyright Notice

Acknowledgments

All other products' name or trademarks are properties of their respective owners.

- AMI is a trademark of American Megatrends Inc.
- Intel®, and Atom™ are trademarks of Intel® Corporation.
- Microsoft Windows® is a registered trademark of Microsoft Corp.
- IBM, PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.

All other product names or trademarks are properties of their respective owners.

Packing List

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

- AHP-2176 Touch Panel PC
- Mounting brackets and screws
- DVD-ROM for manual (in PDF format) and drivers

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

Safety & Warranty

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

d. The equipment does not work well, or you cannot get it to work according to the user's manual.

e. The equipment has been dropped and damaged.

f. The equipment has obvious signs of breakage.

15. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20°C (-4°F) OR ABOVE 60°C (140°F). IT MAY DAMAGE THE EQUIPMENT.

16. RESTRICTED ACCESS LOCATION: location for equipment where both of the following apply:

    a. access can only be gained by SERVICE PERSONS or by USERS who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and

    b. access is through the use of a TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location

17. 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.

FCC

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.

Below Table for China RoHS Requirements
产品中有毒有害物质或元素名称及含量

AAEON Panel PC/ Workstation

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	×	○	○	○	○	○
液晶模块	×	○	○	○	○	○
光驱	×	○	○	○	○	○
触控模块	×	○	○	○	○	○
电源	×	○	○	○	○	○

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。

Contents

Chapter

1

General Information

1.1 Introduction

The AHP-2176 operator panel is an onboard Intel® Celeron® 827E 1.4GHz processor computer that is designed to serve as a human machine interface (HMI). It is a PC-based system with 17" color TFT LCD display, onboard Ethernet controller, multi-COM port interfaces and an audio controller. With a built-in CFast™ socket, the AHP-2176 is as compact and user friendly as a multi-function computer. In addition, its "fit anywhere" design makes it very flexible and able to be used in many different kinds of installations. It can be Panel / VESA / Wallmounted.

For system integrators, this simple, complete, compact and highly integrated system let you easily build an operator panel into your applications. Common industrial applications include factory automation systems, precision machinery, and production process control. It is also suitable for many non-industrial applications, including vending machine, and car park automation. Our operator panel is a reliable, cost-effective solution to your application's processing requirements.

1.2 Specification

System

● CPU	Onboard Intel® Celeron® 827E 1.4GHz Processor
● System Memory	DDR3 800/1066/1333 MHz (204 pin) x 2, SODIMM, Max. 8GB
● Ethernet	10/100/1000Base-T, RJ-45 x 2
● LCD / CRT Controller	Integrated in Processor
● I/O Port	USB2.0 x 4 (2 on front, 2 on rear) DB-9 RS-232 x 4 (COM3/4/5/6) LAN x 2 VGA x 1 Line-out x 1 Power switch x 1
● Storage Disk Drive	CFast™ slot x 1 (Internal); 2.5” SATA Hard Disk Drive x 1
● Expansion Slot	Mini PCIe Card x 2
● OS Support	Windows® CE, Windows® XP, Windows® XP embedded, Windows® 7, linux kernel 2.6.3 or above

Mechanical

● Construction	IP-65 aluminum die cast front bezel
● Mounting	Panel/ Wall/ VESA 100/ Desktop

- Dimension 16.5”(W) x 14.1”(H) x 2.8”(D) (420mm x 358mm x 97mm)
- Carton Dimension 26”(W) x 8.11”(H) x 19.53”(D) (661mm x 206mm x 496mm)
- Net Weight 17.9 lb (8.1 kg)
- Gross Weight 23.1 lb (10.5 kg)

Environmental

- Operating Temperature -4°F~140°F (-20°C~60°C)
- Storage Temperature -4°F~158°F (-20°C~70°C)
- Operating Humidity 5% to 95%@ 40°C, non-condensing
- Vibration 1 g rms/ 5-500Hz/ Operation (HDD)
- Shock 20 G peak acceleration (11 msec. duration)
- EMC CE/FCC Class A
- Power Supply 9~30V DC input ;
  Over-voltage protection
  Low-voltage protection
  Reverse protection

Power Supply

- DC Input 9~30V DC input ;
  Over-voltage protection
  Low-voltage protection
  Reverse protection

LCD

- Display Type 17” TFT LCD
- Max. Resolution 1280x1024
- Max. Colors 16.7M colors
- Luminance (cd/m^2) HTT : 350
- Viewing Angle HTT: 170^o (H),160^o (V)
- Backlight LED
- Backlight MTBF (Hours) HTT : 50,000

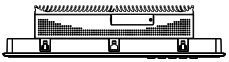
Touch Screen

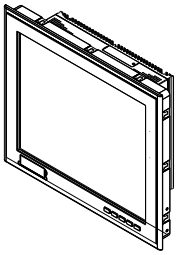
- Type 5-wire analog resistive
- Resolution 2048x2048
- Light Transmission > 80%
- Lifetime 35 million activations

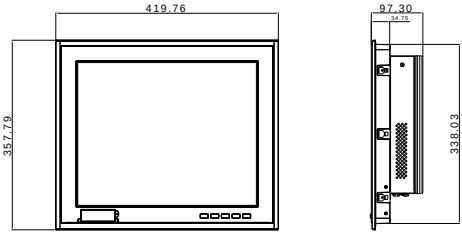
1.3 Dimension

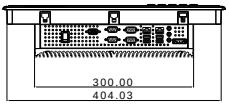
AHP- 2176

UNITS:mm









Chapter

2

Hardware Installation

2.1 Panelmount Installation

The display panel can be mounted into the wall. You will need the screws along with the mounting brackets, which be packed in the accessory box. Follow the steps below:

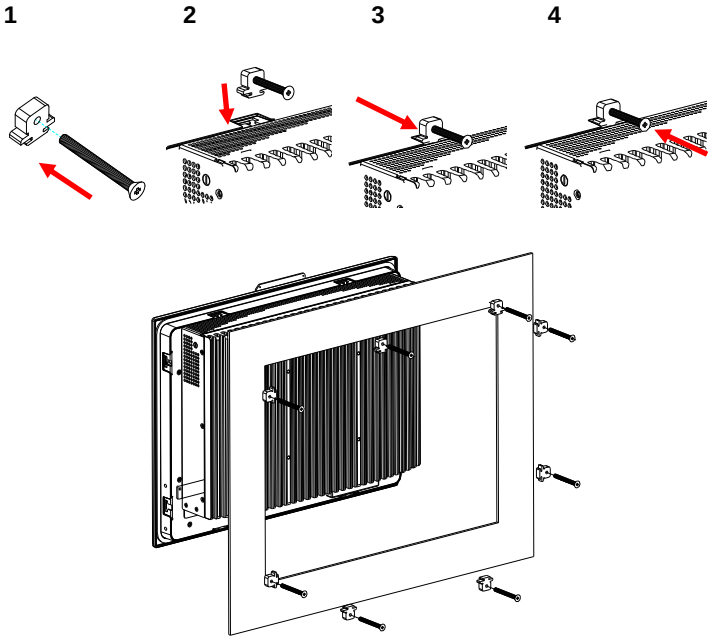
Before you start to follow the instructions, please place the display panel into the wall. See the following illustration on the left.

Step 1: Place the mounting brackets and plug the screw.

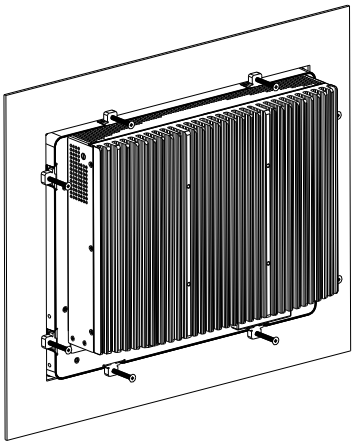
Step 2: Aim the mounting set at the hole on the monitor.

Step 3: Move the mounting set to the narrow gauge and fix it with screws.

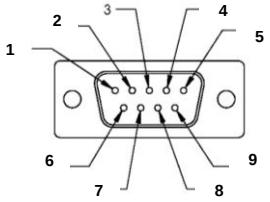
Step 4: You've completed the preliminary when the mounting set is tightened. Next, repeat the steps and tighten all mounting set around the monitor until the monitor is firmly mounting on the wall.



Complete Illustration



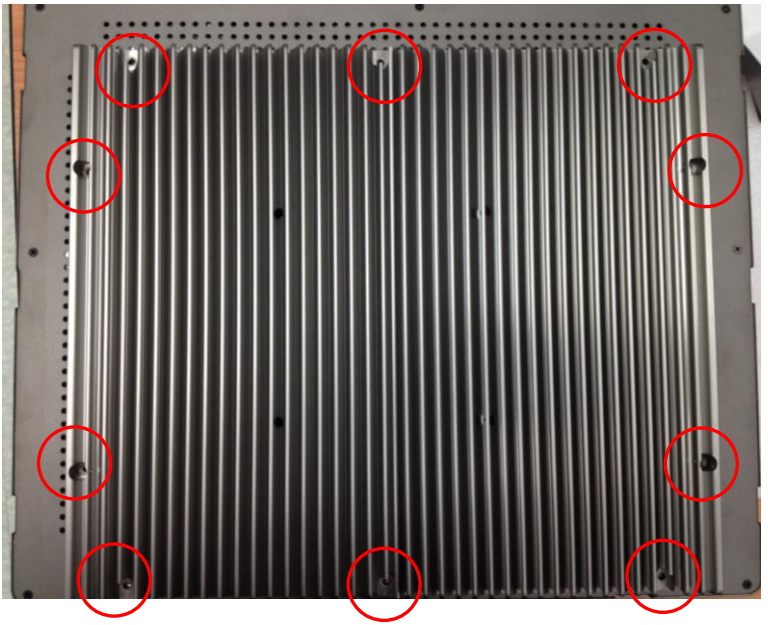
2.2 COM Port Connector



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

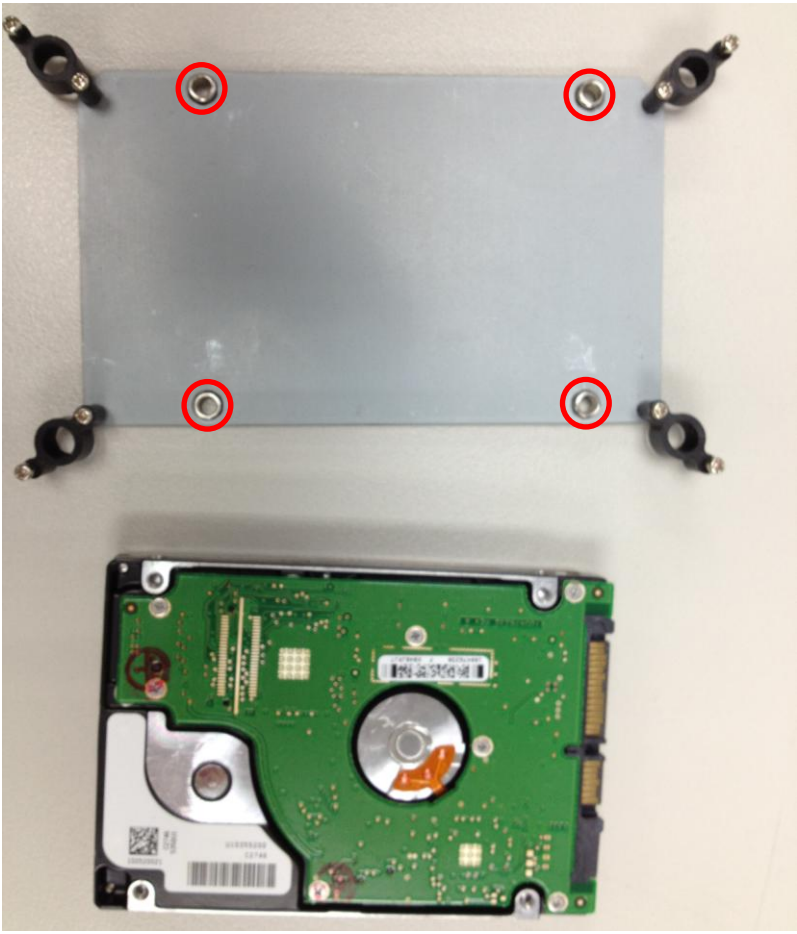
2.3 Hard Disk Drive Installation

Step 1: Unfasten the screws of the heatsink



Step 2: Get the Bracket of Hard Disk Drive from the package

Step 3: Fasten the Hard Disk onto the bracket



Step 4: Fasten the screws of the hard disk bracket onto the AHP-2176

The warning shall be either

- the symbol (IEC 60417-5041 (DB:2002-10)):

- or the following or similar wording

WARNING
HOT SURFACE
DO NOT TOUCH

Chapter

3

AMI BIOS Setup

3.1 System Test and Initialization

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

System configuration verification
These routines check the current system configuration stored in the CMOS memory and BIOS NVRAM. If system configuration is not found or system configuration data error is detected, system will load optimized default and re-boot with this default system configuration automatically.

There are four situations in which you will need to setup system configuration:
1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The system configuration is reset by Clear-CMOS jumper
4. The CMOS memory has lost power and the configuration information has been erased.

The AHP-2176 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 AMI BIOS Setup

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

Entering Setup

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

Main

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

Advanced

Enable disable boot option for legacy network devices.

Chipset

Host bridge parameters.

Boot

Enables/disable quiet boot option.

Security

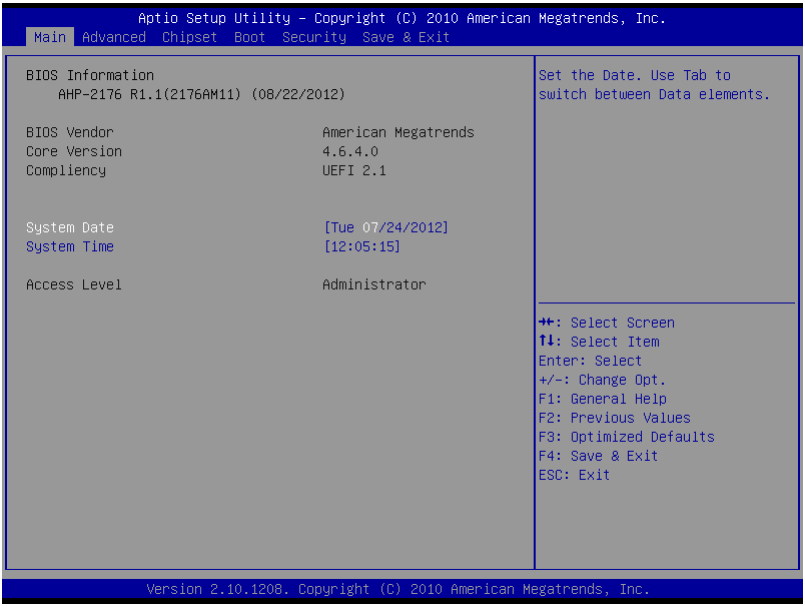
Set setup administrator password.

Save&Exit

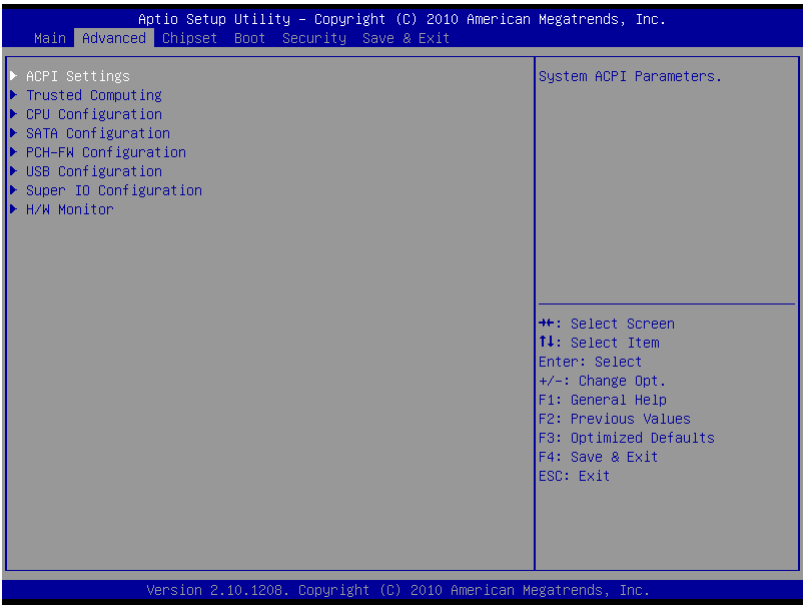
Exit system setup after saving the changes.

Setup Menu

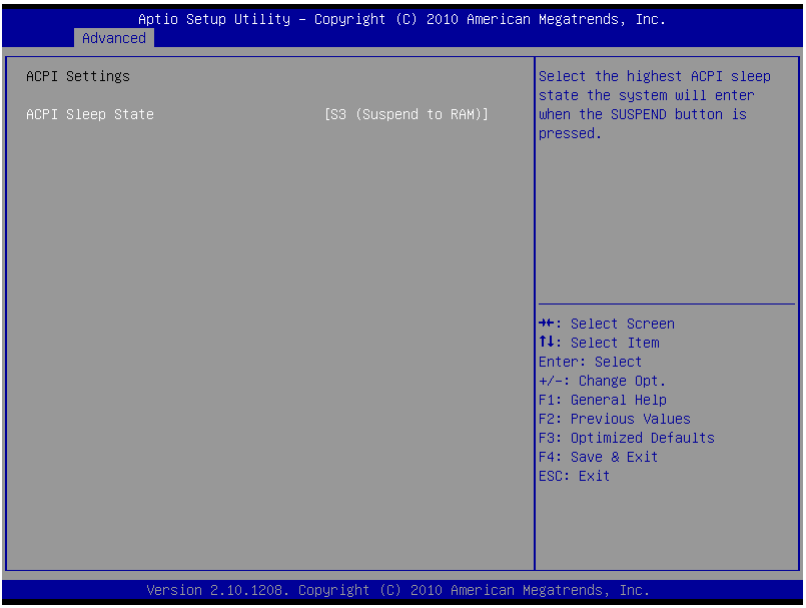
Setup submenu: Main



Setup submenu: Advanced



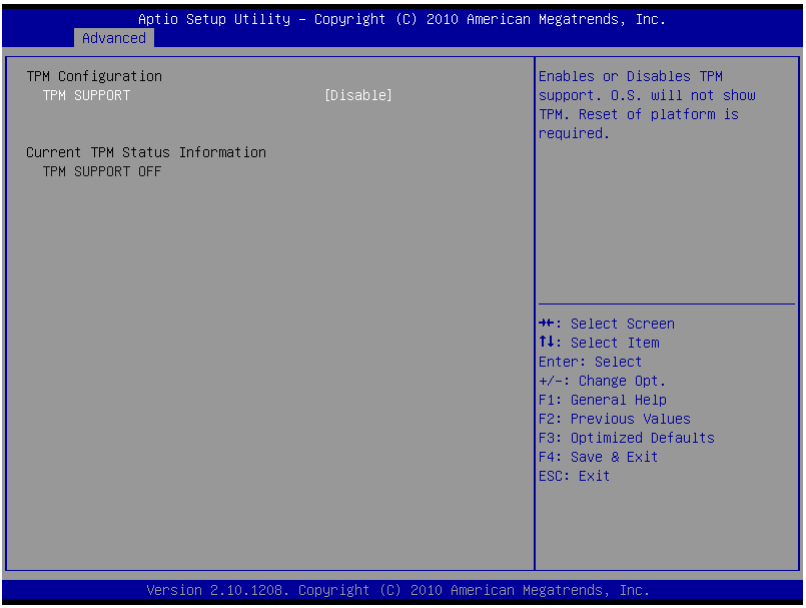
ACPI Settings



Options Summary :

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

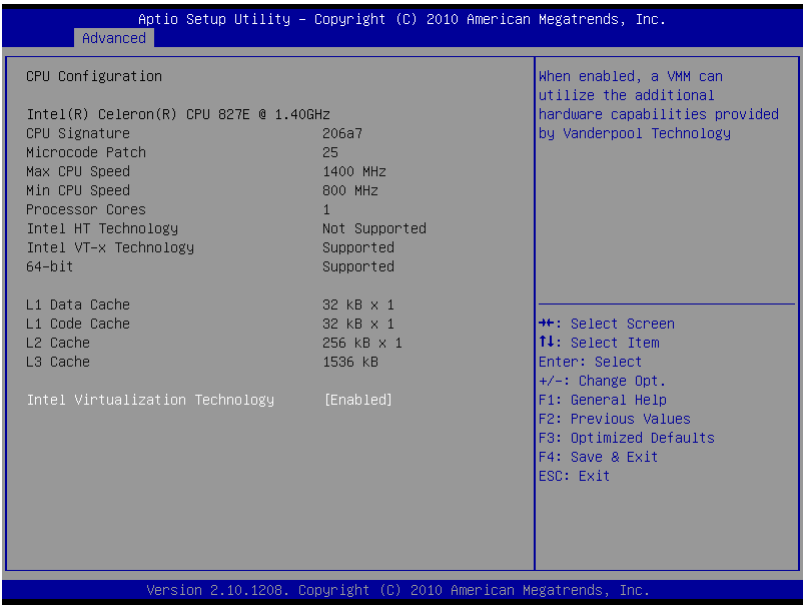
Trusted Computing



Option Summary :

TPM SUPPORT	Disable	Default
	Enable	
Enables or Disables TPM support. O.S. will not show TPM. Reset of platform is required.		

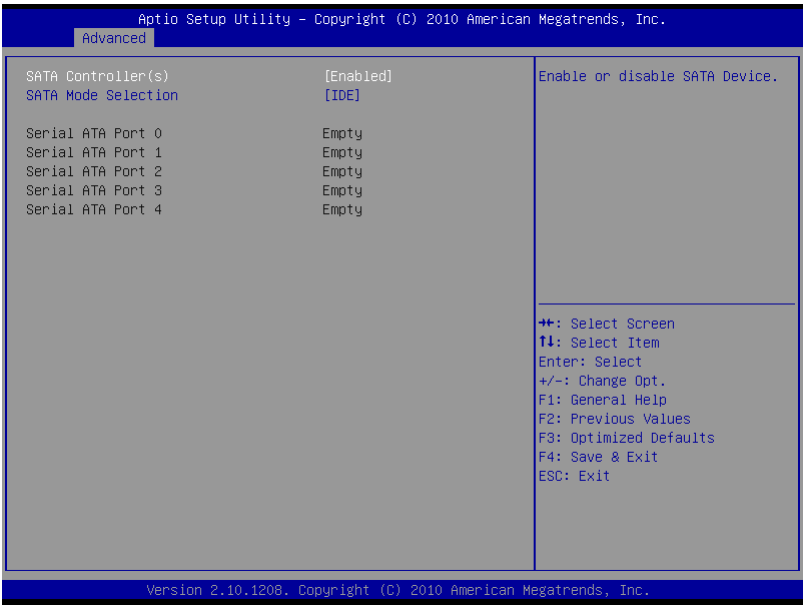
CPU Configuration



Options Summary :

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

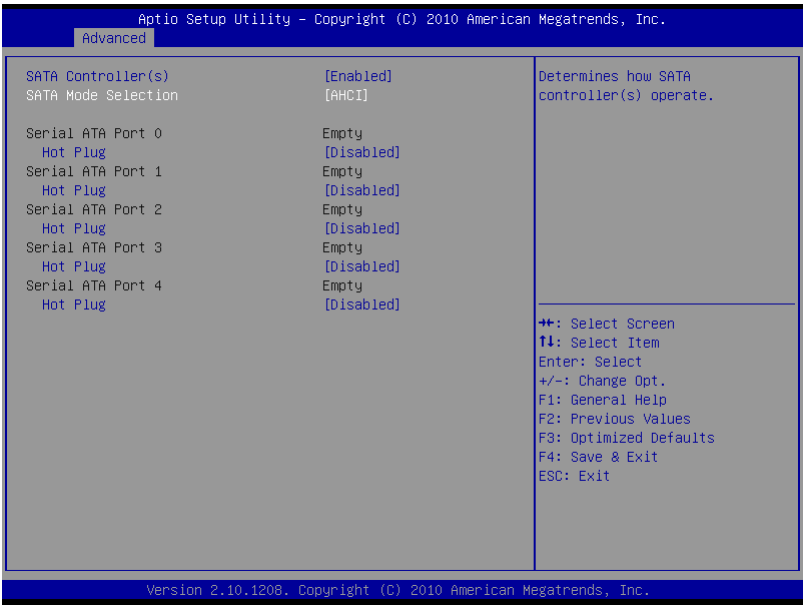
SATA Configuration (IDE)



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.		

IDE Configuration (AHCI)

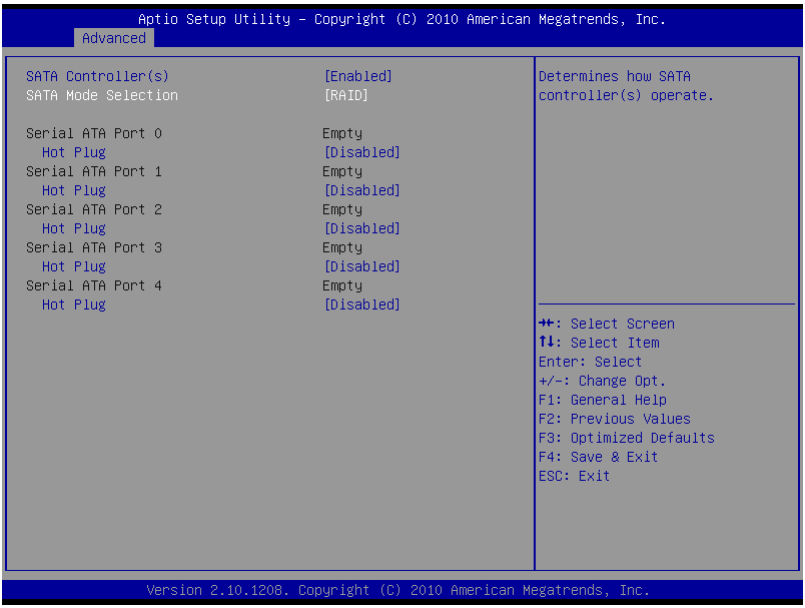


Options Summary :

SATA Controller(s)	Disabled	
	Enabled	Default
Enable or Disable SATA Port.		
SATA Mode Selection	IDE	
	AHCI	Selected
	RAID	
Determines how SATA controller(s) operate.		
SATA Port 0 Hot Plug	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		
SATA Port 1 Hot Plug	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		
SATA Port 2 Hot Plug	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		

SATA Port 3 Hot Plug	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		
SATA Port 4 Hot Plug	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		

IDE Configuration (RAID)

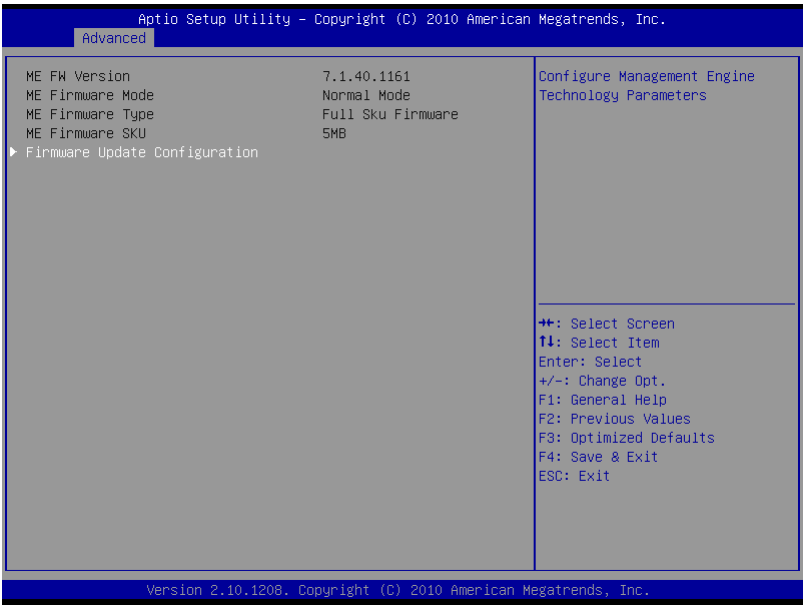


Options Summary :

SATA Controller(s)	Disabled	
	Enabled	Default
Enable or Disable SATA Port.		
SATA Mode	IDE	
	AHCI	
	RAID	Selected
Determines how SATA controller(s) operate.		
SATA Port 0 Hot Plug	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		
SATA Port 1 Hot Plug	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		
SATA Port 2 Hot Plug	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		

SATA Port 3 Hot Plug	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		
SATA Port 4 Hot Plug	Disable	Default
	Enabled	
Designates this port as Hot Pluggable.		

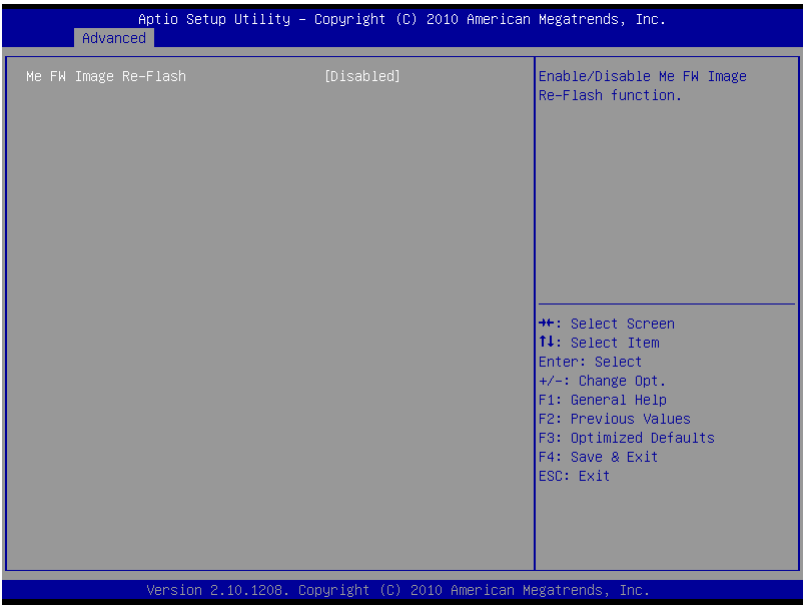
PCH-FW Configuration



Options Summary :

Firmware Update Configuration	Configure Management Engine Technology Parameters.

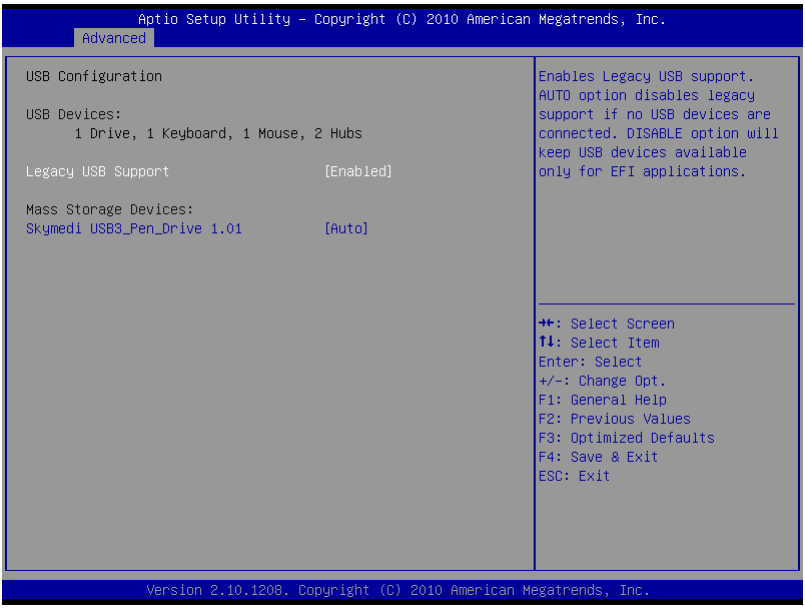
Firmware Update Configuration



Options Summary :

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

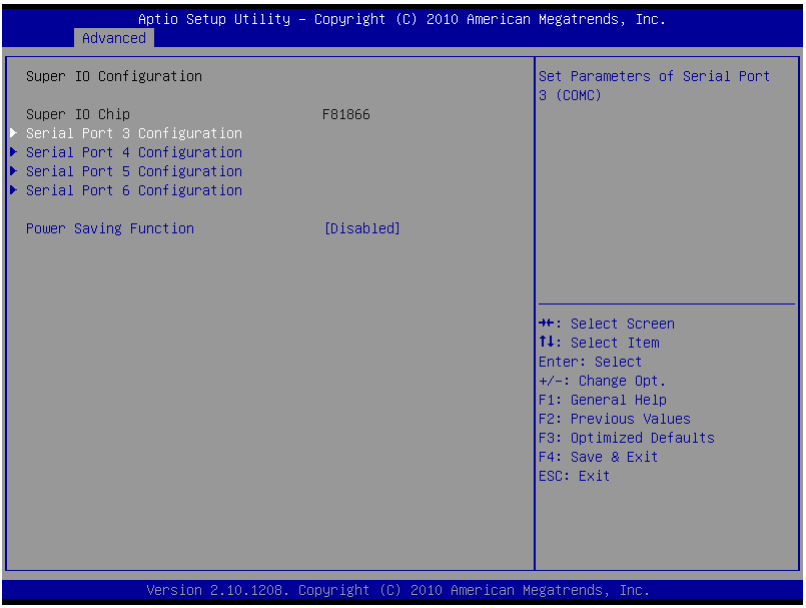
USB Configuration



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.		

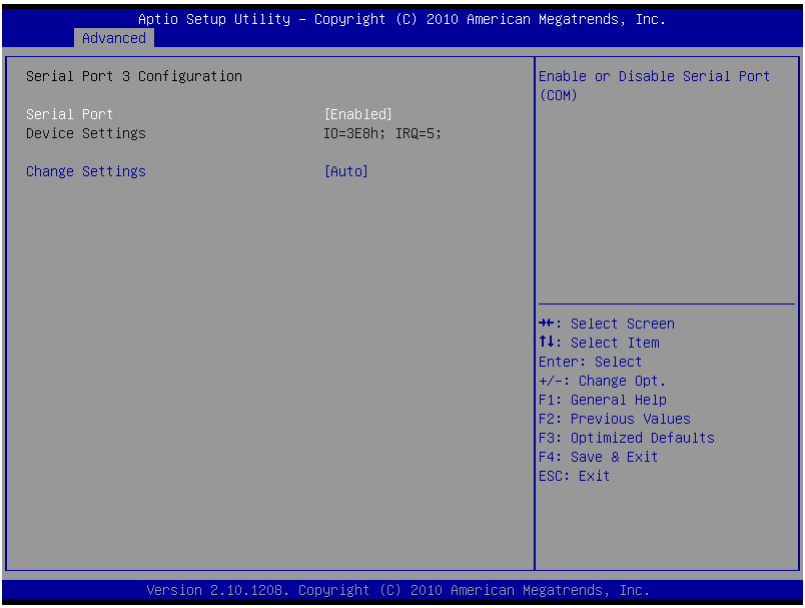
Super IO Configuration



Options Summary :

Serial Port 3 Configuration	Set Parameters of Serial Port 3 (COMC)	
Serial Port 4 Configuration	Set Parameters of Serial Port 4 (COMD)	
Serial Port 5 Configuration	Set Parameters of Serial Port 5 (COME)	
Serial Port 6 Configuration	Set Parameters of Serial Port 6 (COMF)	
Power Saving Function	Disabled	Default
	Enabled	
Enable to reduce power consumption is system off state. When Enabled, only power button can power-up system.		

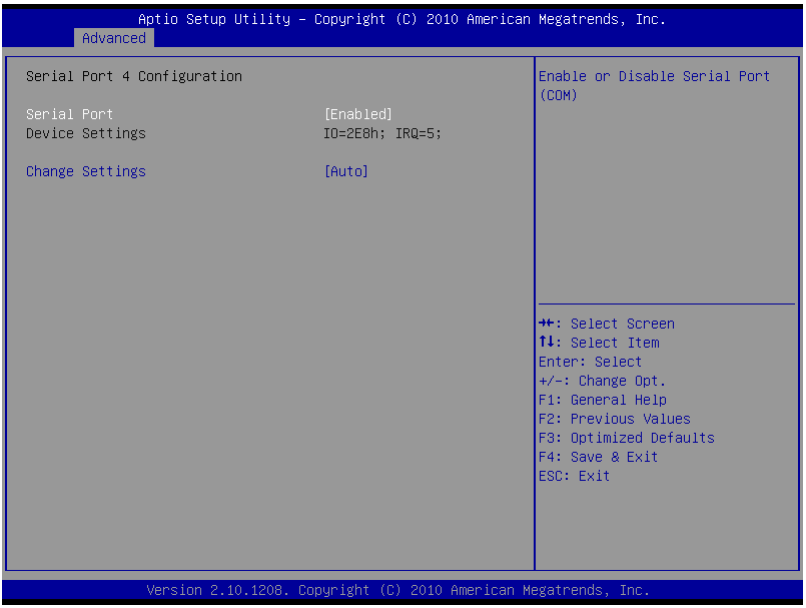
Serial Port 3 Configuration



Options Summary :

Serial Port	Enabled	Default
	Disabled	
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=3E8h; IRQ=5;	
	IO=2E8h; IRQ=5;	
	IO=2D0h; IRQ=5'	
	IO=2D8h; IRQ=5;	
Select an optimal setting for Super IO device.		

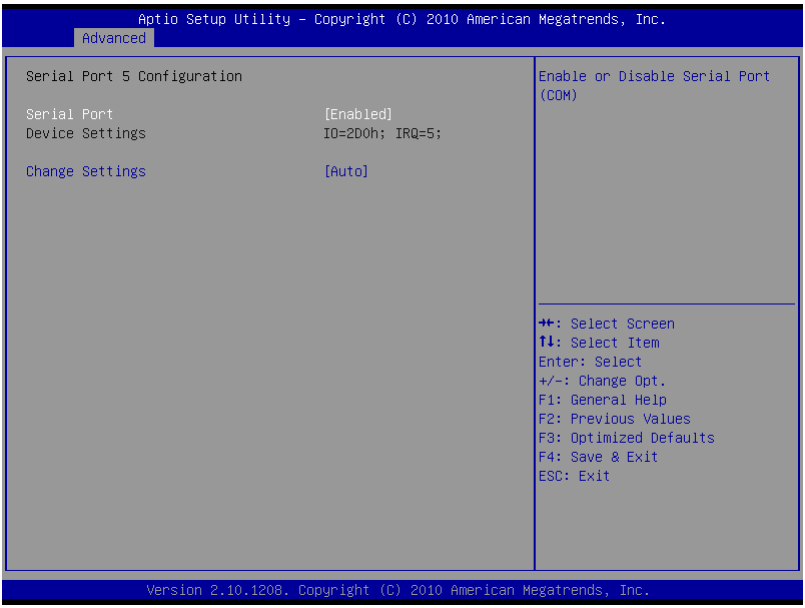
Serial Port 4 Configuration



Options Summary :

Serial Port	Enabled	Default
	Disabled	
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=2E8h; IRQ=5;	
	IO=3E8h; IRQ=5;	
	IO=2D0h; IRQ=5;	
	IO=2D8h; IRQ=5;	
Select an optimal setting for Super IO device.		

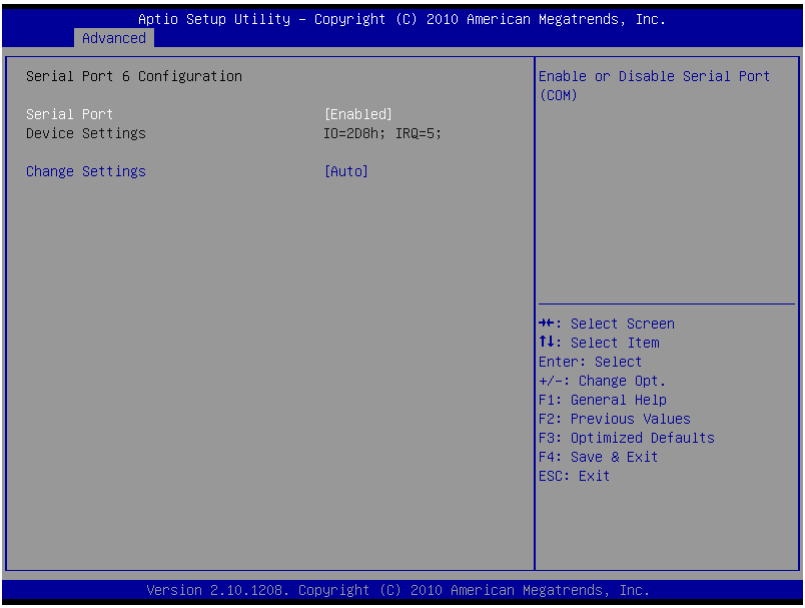
Serial Port 5 Configuration



Options Summary :

Serial Port	Enabled	Default
	Disabled	
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=2D0h; IRQ=5;	
	IO=3E8h; IRQ=5;	
	IO=2E8h; IRQ=5;	
	IO=2D8h; IRQ=5;	
Select an optimal setting for Super IO device.		

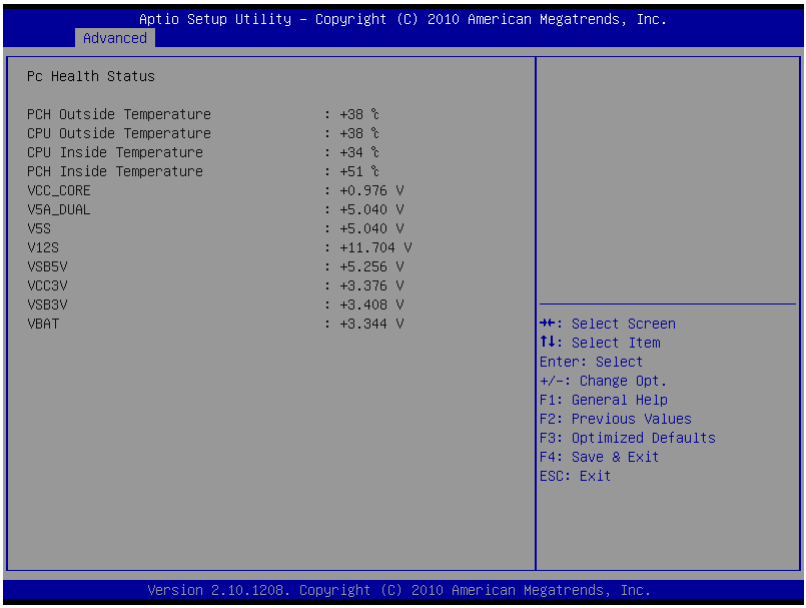
Serial Port 6 Configuration



Options Summary :

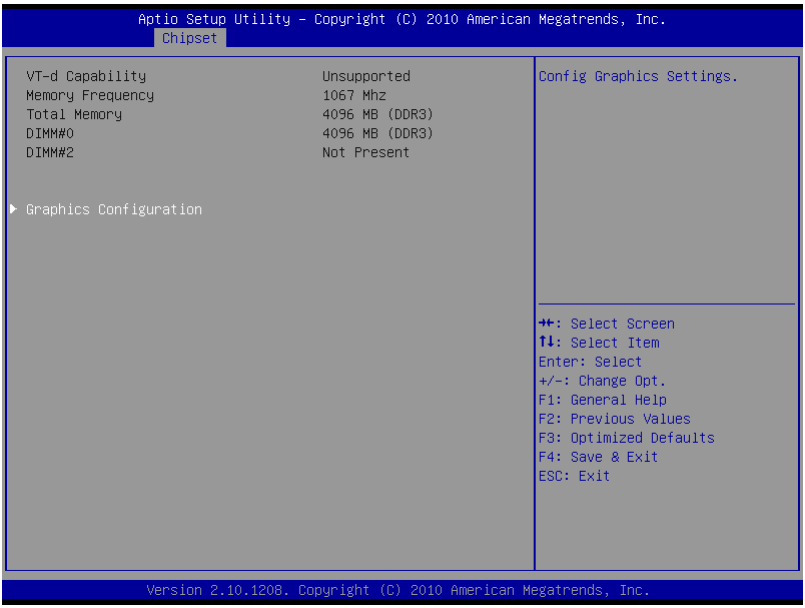
Serial Port	Enabled	Default
	Disabled	
Enable or Disable Serial Port (COM)		
Change Settings	Auto	Default
	IO=2D8h; IRQ=5	
	IO=3E8h; IRQ=5;	
	IO=2E8h; IRQ=5;	
	IO=2D0h; IRQ=5;	
Select an optimal setting for Super IO device.		

H/W Monitor


Aptio Setup Utility – Copyright (C) 2010 American Megatrends, Inc.
Advanced
Pc Health Status
PCH Outside Temperature : +38 %
CPU Outside Temperature : +38 %
CPU Inside Temperature : +34 %
PCH Inside Temperature : +51 %
VCC_CORE : +0.976 V
V5A_DUAL : +5.040 V
V5S : +5.040 V
V12S : +11.704 V
VSB5V : +5.256 V
VCC3V : +3.376 V
VSB3V : +3.408 V
VBAT : +3.344 V
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Setup submenu: Chipset

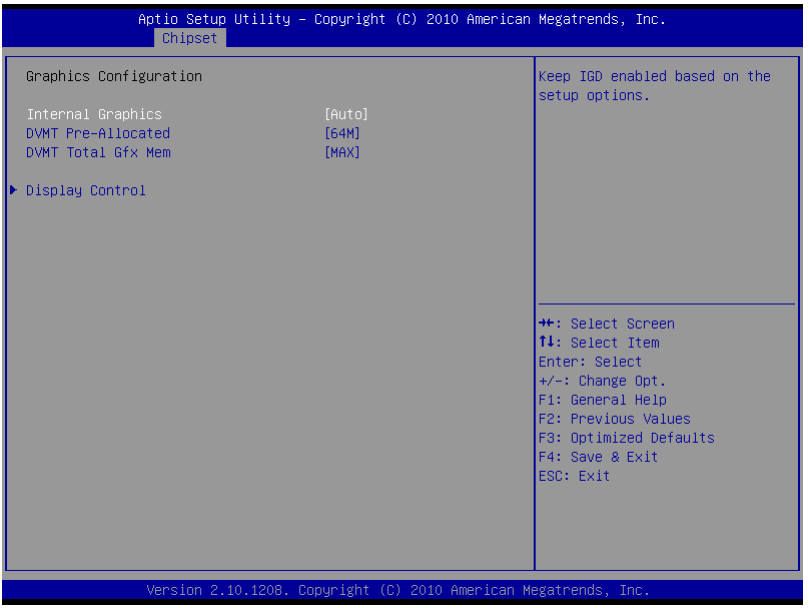
System Agent (SA) Configuration



Options Summary :

Graphics Configuration	Config Graphics Settings.

Graphics Configuration

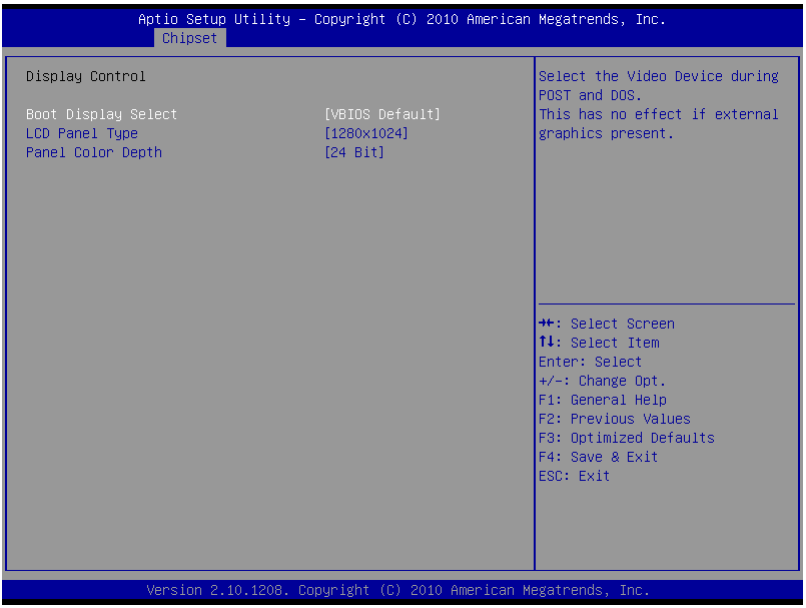


Options Summary :

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.		

Display Control

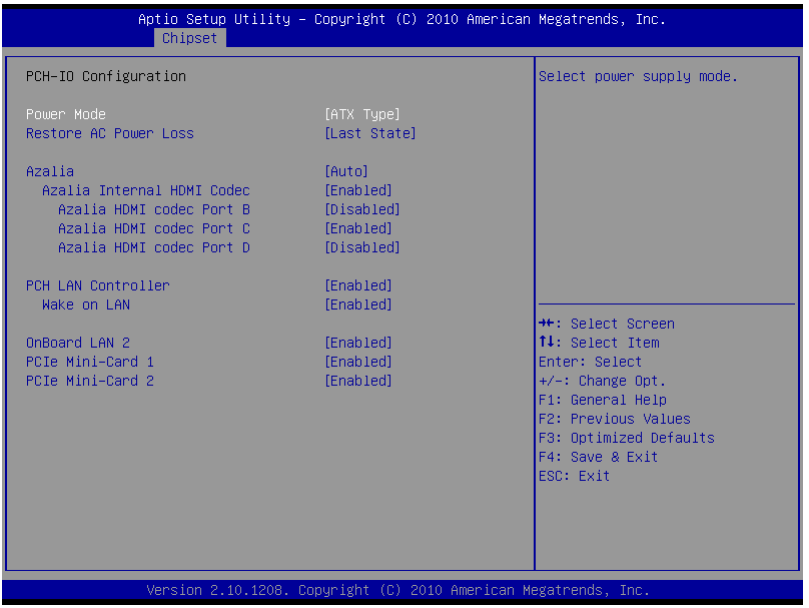


Options Summary :

Boot Display Select	VBIOS Default	Default
	CRT	
	LVDS	
	CRT+LVDS	
Select the Video Device during POST and DOS. This has no effect if external graphics present.		
LCD Panel Type	640x480	
	800x480	
	800x600	
	1024x768	
	1280x1024	Default
	1600x1200	
	1366x768	
	1680x1050	
	1920x1200	
	1440x900	

	1680x1050	
	1280x800	
	1920x1080	
Select LCD panel used by Internal Graphics Device by selecting the appropriate setup items.		
Panel Color Depth	18 bit	
	24 bit	
Select the LFP Panel Color Depth		

PCH-IO Configuration

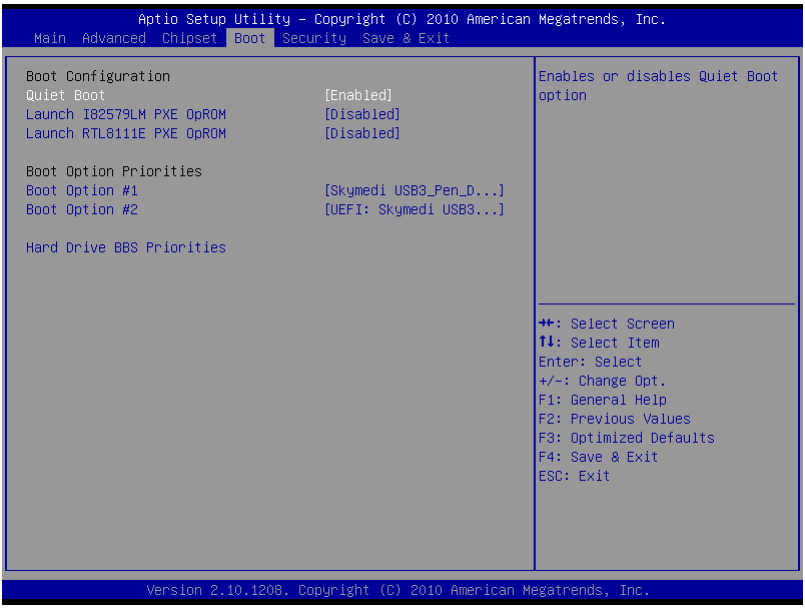


Options Summary :

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.		
Azalia	Disabled	
	Enabled	
	Auto	Default
Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled Enabled = Azalia will be unconditionally Enabled Auto = Azalia will be enabled if present, disabled otherwise.		
Azalia Internal HDMI Codec	Disabled	
	Enabled	Default

Enable or disable internal HDMI codec for Azalia.		
Azalia HDMI codec Port B	Disabled	Default
	Enabled	
Enable or disable internal HDMI codec Port for Azalia.		
Azalia HDMI codec Port C	Disabled	
	Enabled	Default
Enable or disable internal HDMI codec Port for Azalia.		
Azalia HDMI codec Port D	Disabled	Default
	Enabled	
Enable or disable internal HDMI codec Port for Azalia.		
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.		
OnBoard LAN 2	Disabled	
	Enabled	Default
OnBoard LAN 2 RTL8111E LAN En/Disable Control		
PCIe Mini-Card 1	Disabled	
	Enabled	Default
Enable / Disable PCIe Mini-Card 1		
PCIe Mini-Card 2	Disabled	
	Enabled	Default
Enable / Disable PCIe Mini-Card 2		

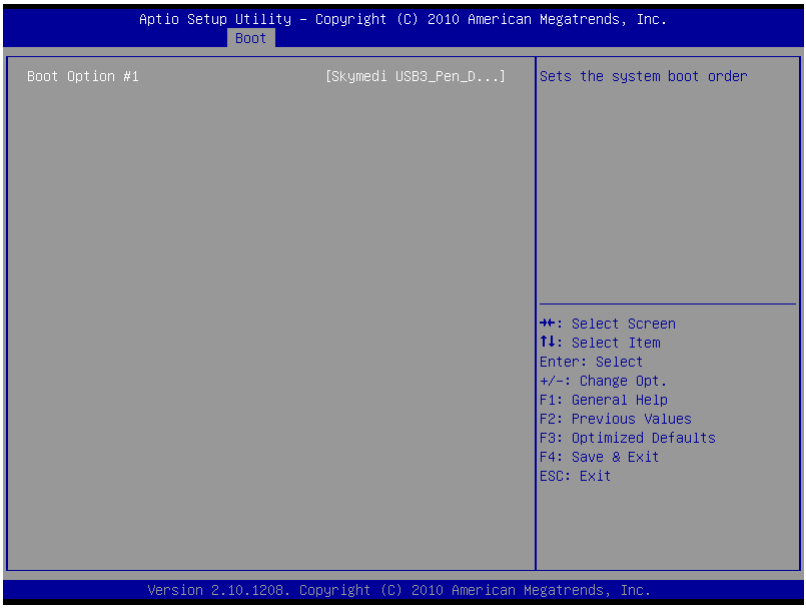
Setup submenu: Boot



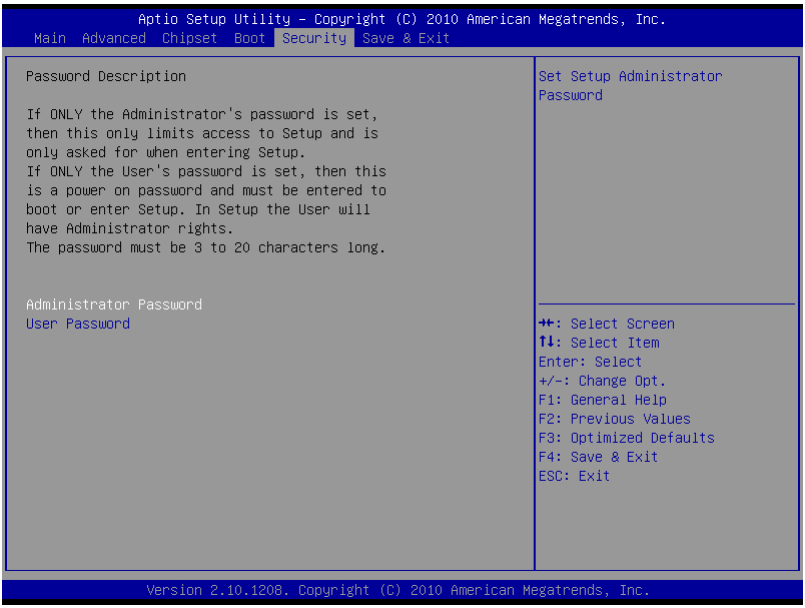
Options Summary :

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		

Hard Drives BBS Priorities



Submenu: Security



Change User/Supervisor Password

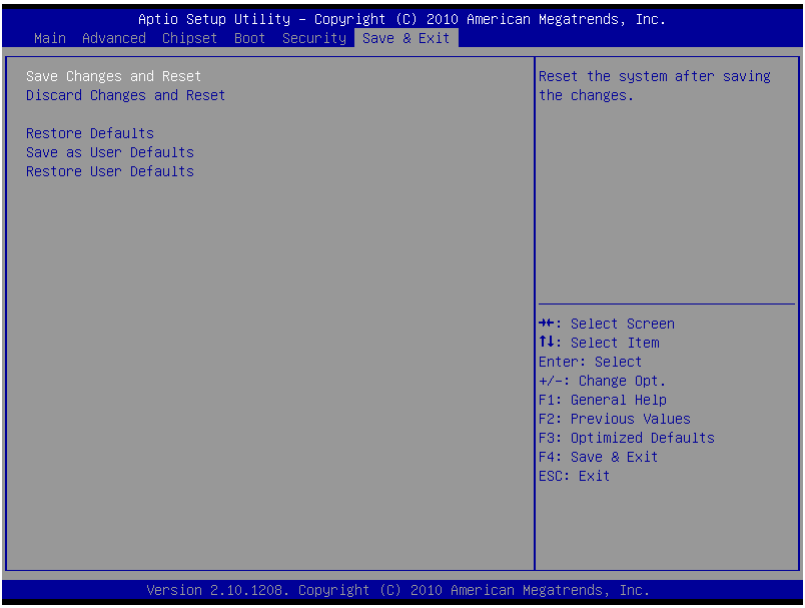
You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

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

Removing the Password

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

Setup submenu: Exit



Chapter

4

Driver Installation

.

The AHP-2176 comes with an AutoRun DVD-ROM that contains all drivers and utilities that can help you to install the driver automatically.

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

Follow the sequence below to install the drivers:

Step 1 – Install Chipset Driver

Step 2 – Install VGA Driver

Step 3 – Install Audio Driver

Step 4 – Install LAN Driver

Step 5 – Install ME Driver

Step 6 – Install TPM Driver

Step 7 – Install Touch Panel Driver

Step 8 – Install Serial Port Driver (Optional)

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

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the AHP-2176 DVD-ROM into the DVD-ROM drive. And install the drivers from Step 1 to Step 8 in order.

Step 1 – Install Chipset Driver

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

Step 2 – Install VGA Driver

1. Click on the ***STEP2-VGA*** folder and select the OS folder your system is
2. Double click on the ***.exe*** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Note 1:

- This motherboard supports VGA and LVDS display devices. In Single Display mode, use the hot keys to switch between VGA to LVDS device or vice versa. By default, press **<Ctrl>+<Alt>+<F1>** to switch to VGA device and press **<Ctrl>+<Alt>+<F3>** to switch to LVDS device.
- Before removing the current display device, connect the display device that you want to use, and then press the hot keys to switch to that device.

Note 2: If the OS is Windows® XP, you have to install the driver of dotNet Framework first. Simply click on ***dotnetfx35.exe*** located in

dotNet Framwork folder.

Step 3 –Install Audio Driver

1. Click on the ***STEP3-AUDIO*** folder and select the OS folder your system is
2. Double click on the ***.exe*** located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 4 –Install LAN Driver

1. Click on the ***STEP4-LAN*** folder and select the folder of ***intel_82579*** or ***realtek_8111E*** based on the LAN chipset in your system.
2. Select the OS folder your system is located in the chipset folder, then double click on ***.exe*** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 5 – Install ME Driver

1. Click on the ***STEP5-ME*** folder and double click on the ***setup.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 6 – Install TPM Driver

1. Click on the ***STEP6-TPM*** folder and double click on the ***Setup.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 7 – Install Touch Panel Driver

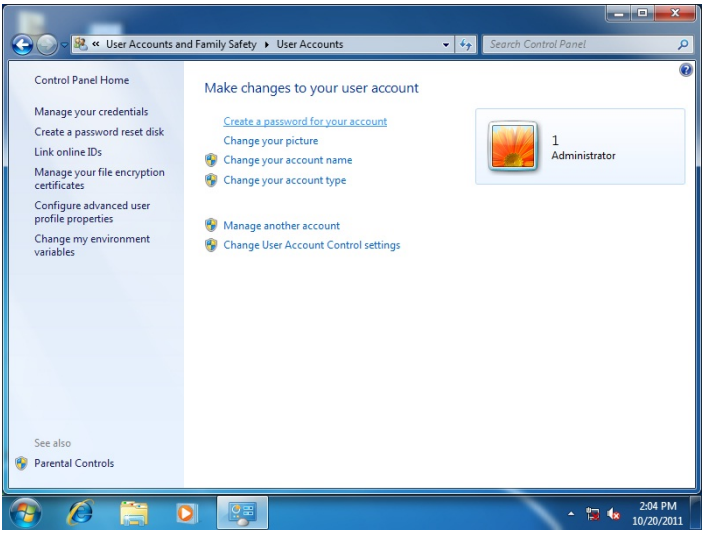
1. Click on the ***STEP7-Touch Panel Driver*** folder and select the OS folder your system is
2. Double click on the ***setup.exe*** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 8 –Install Serial Port Driver (Optional)

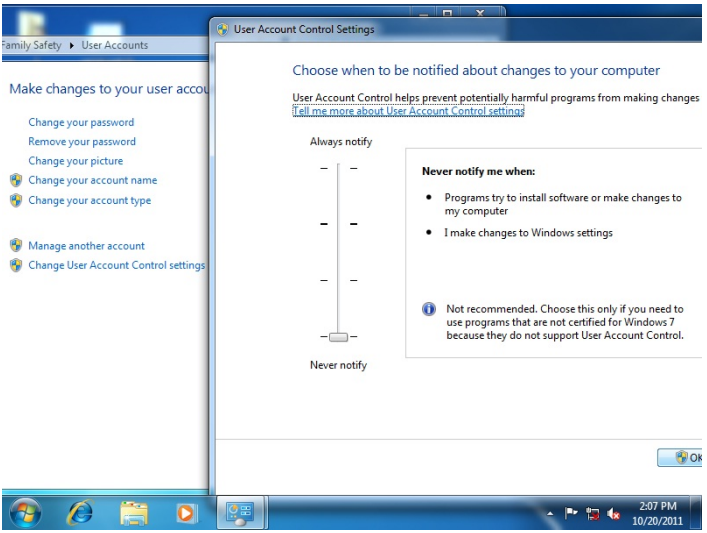
For Windows® XP 32-bit, select the folder of ***WINXP_32*** and double click on the ***patch.bat***

For Windows® 7, please refer to the installation procedures below.

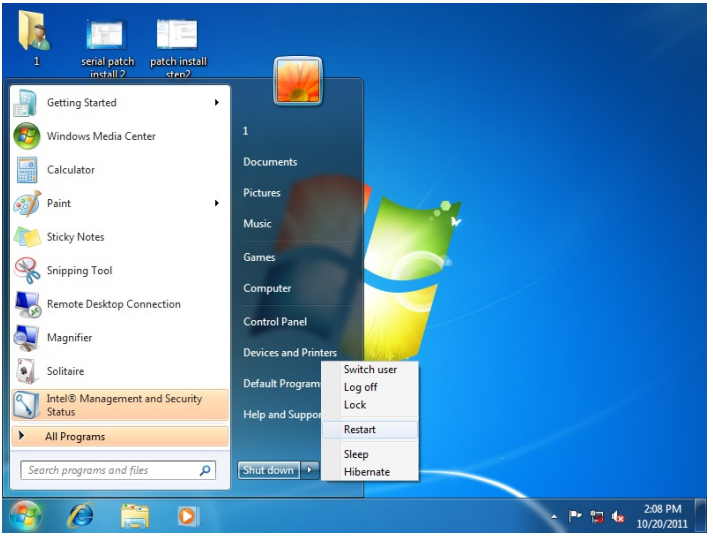
1. Create a password for Administrator account.



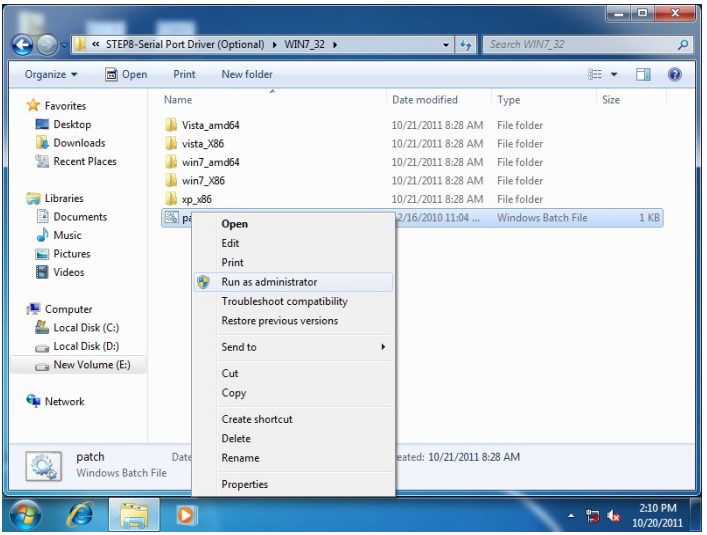
2. Change User Account Control Settings to [Never notify]

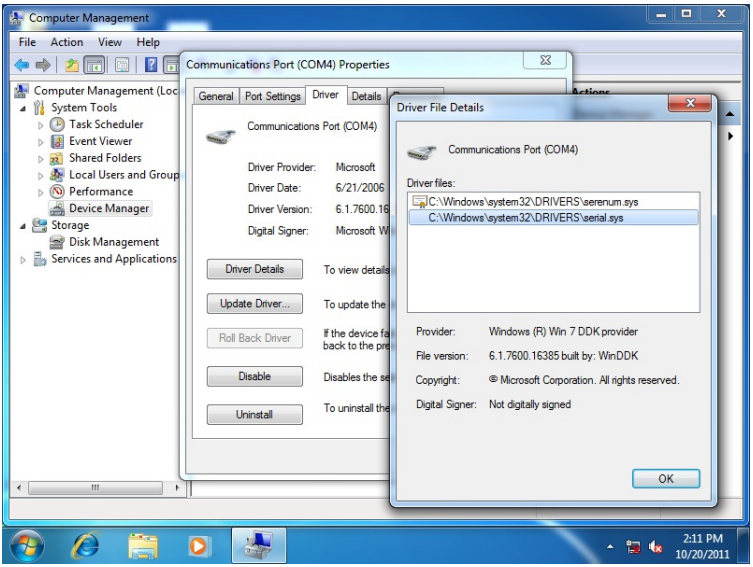


3. Reboot and Administrator login.



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




Computer Management
File Action View Help
Computer Management (Loc
System Tools
Task Scheduler
Event Viewer
Shared Folders
Local Users and Group
Performance
Device Manager
Storage
Disk Management
Services and Applications
Communications Port (COM4) Properties
General
Port Settings
Driver
Details
Communications Port (COM4)
Driver Provider: Microsoft
Driver Date: 6/21/2006
Driver Version: 6.1.7600.16
Digital Signer: Microsoft W
Driver Details
To view details
Update Driver...
To update the
Roll Back Driver
If the device fa
back to the pre
Disable
Disables the se
Uninstall
To uninstall the
Driver File Details
Communications Port (COM4)
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
2:11 PM
10/20/2011

Appendix

A

Programming the Watchdog Timer

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)	**0xF6** (Note4)		(Note24)	Time of watchdog timer (0~255) This register is byte access
Counting Unit	**0x07** (Note5)	**0xF5** (Note6)	**3** (Note7)	**0**(Note8)	Select time unit. 0: second 1: minute
Watchdog Enable	**0x07** (Note9)	**0xF5** (Note10)	**5** (Note11)	**1** (Note12)	0: Disable 1: Enable
Timeout Status	**0x07** (Note13)	**0xF5** (Note14)	**6** (Note15)	**1**	1:Clear timeout status
Output Mode	**0x07** (Note16)	**0xF5** (Note17)	**4** (Note18)	**1** (Note19)	Select WDTRST# output mode 0: level 1: pulse
WDTRST output	**0x07** (Note20)	**0xFA** (Note21)	**0** (Note22)	**1**(Note23)	Enable/Disable time out output via WDTRST# 0: Disable 1: Enable

```
*****************************************************************************
***
// 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
#define byte   ModeLDN   // This parameter is represented from
Note16
#define byte   ModeReg   // This parameter is represented from
Note17
#define byte   ModeBit   // This parameter is represented from Note18
#define byte   ModeVal   // This parameter is represented from Note19
#define byte   WDTRstLDN   // This parameter is represented from
Note20
#define byte   WDTRstReg   // This parameter is represented from
Note21
```

```
#define byte   WDTRstBit   // This parameter is represented from Note22
#define byte   WDTRstVal   // This parameter is represented from Note23
*************************************************************************************
***
*************************************************************************************
***
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);
        // WDT output mode setting, level / pulse
        SIOBitSet(ModeLDN, ModeReg, ModeBit, ModeVal);
        // Watchdog timeout output via WDTRST#
        SIOBitSet(WDTRstLDN, WDTRstReg, WDTRstBit,
WDTRstVal);
}

VOID   WDTClearTimeoutStatus(){
        SIOBitSet(StatusLDN, StatusReg, StatusBit, 1);
}
*******************************************************************************
***
*******************************************************************************
***
VOID   SIOEnterMBPnPMode(){
        IOWriteByte(SIOIndex, 0x87);
        IOWriteByte(SIOIndex, 0x87);
}

VOID   SIOExitMBPnPMode(){
        IOWriteByte(SIOIndex, 0xAA);
}

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

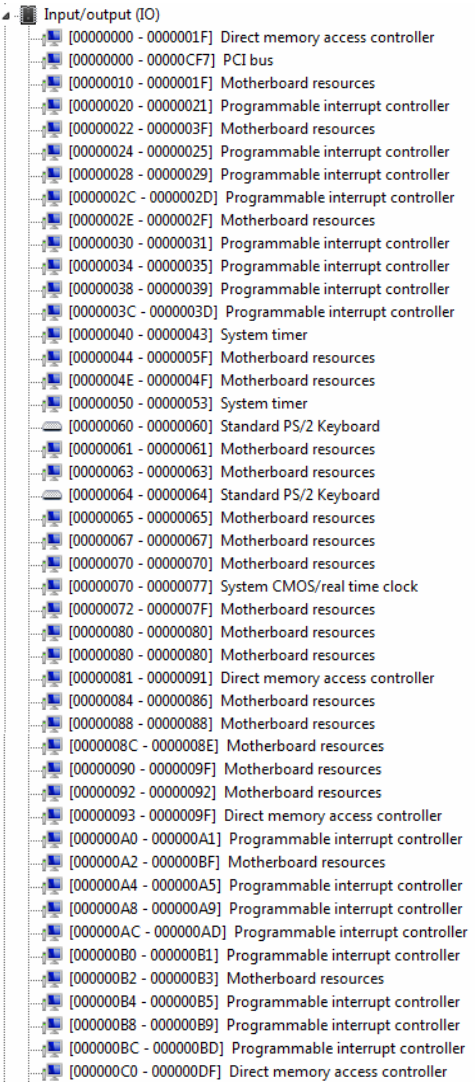
```
VOID   SIOBitSet(byte LDN, byte Register, byte BitNum, byte
Value){
        Byte TmpValue;

        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();
}
*******************************************************************************
***
```

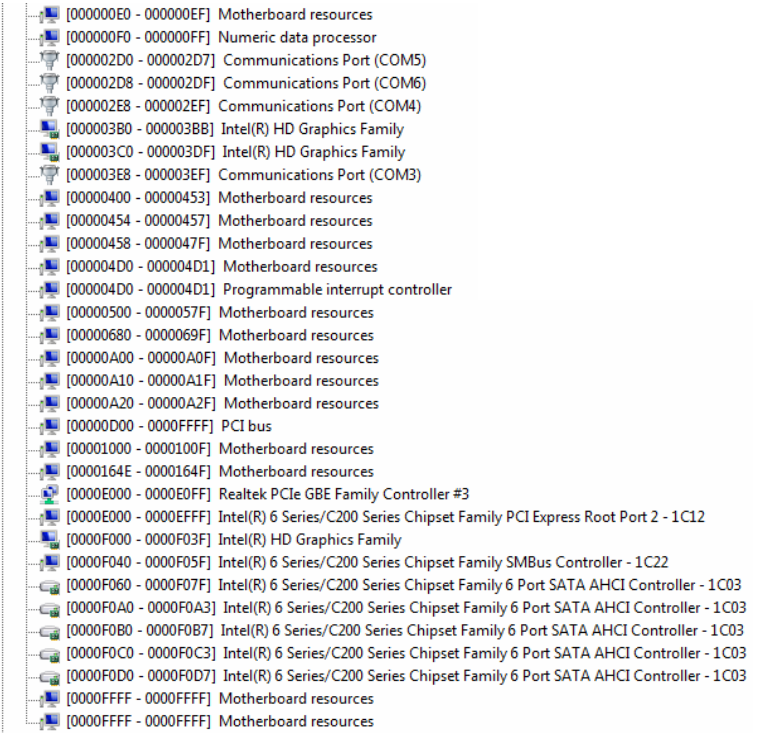
Appendix

B

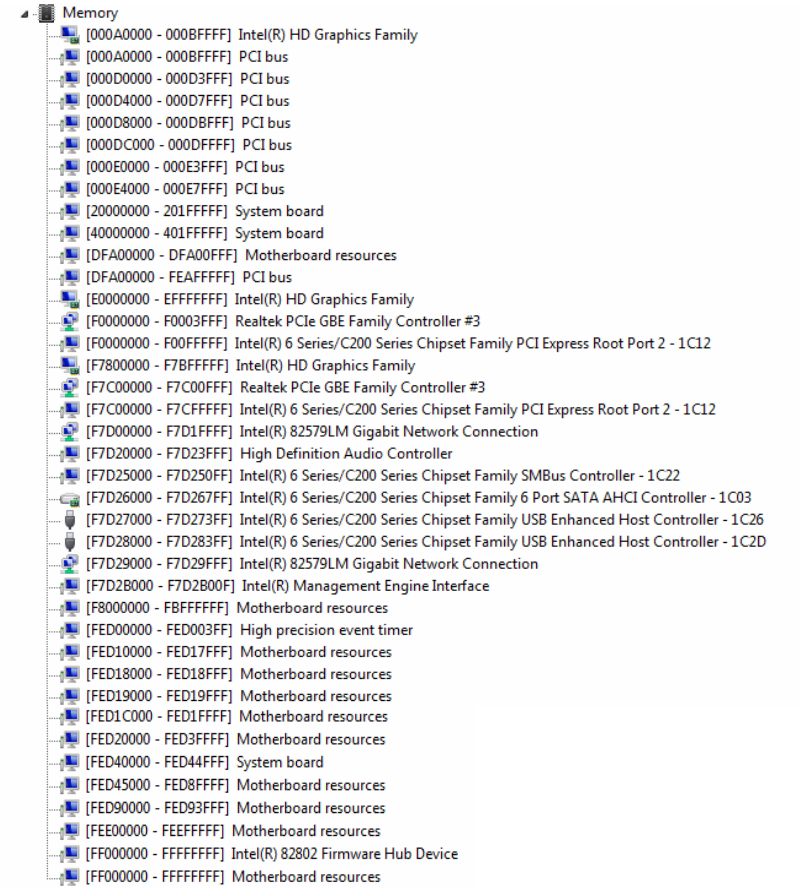
I/O Information

B.1 I/O Address Map

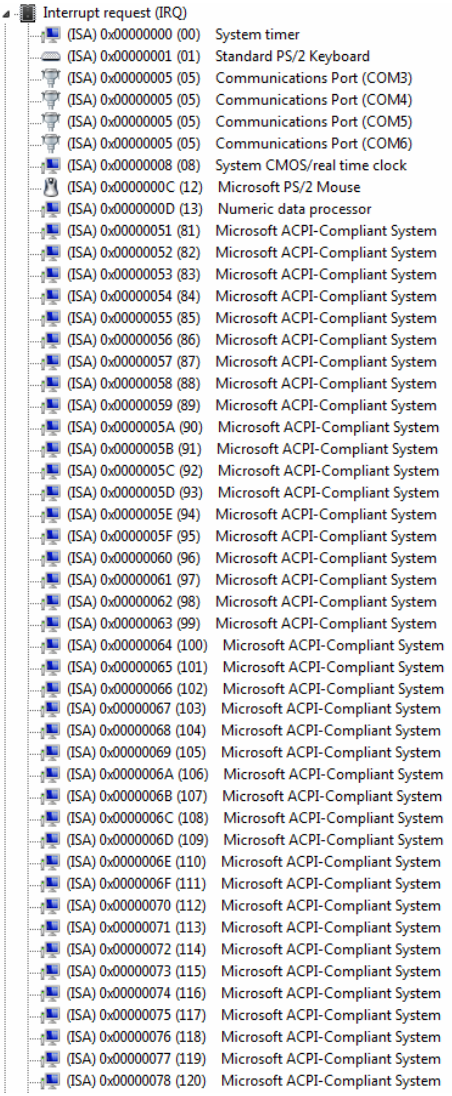



[000000E0 - 000000EF] Motherboard resources
[000000F0 - 000000FF] Numeric data processor
[000002D0 - 000002D7] Communications Port (COM5)
[000002D8 - 000002DF] Communications Port (COM6)
[000002E8 - 000002EF] Communications Port (COM4)
[000003B0 - 000003BB] Intel(R) HD Graphics Family
[000003C0 - 000003DF] Intel(R) HD Graphics Family
[000003E8 - 000003EF] Communications Port (COM3)
[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 - 00000A0F] Motherboard resources
[00000A10 - 00000A1F] Motherboard resources
[00000A20 - 00000A2F] Motherboard resources
[00000D00 - 0000FFFF] PCI bus
[00001000 - 0000100F] Motherboard resources
[0000164E - 0000164F] Motherboard resources
[0000E000 - 0000E0FF] Realtek PCIe GBE Family Controller #3
[0000E000 - 0000EFFF] Intel(R) 6 Series/C200 Series Chipset Family PCI Express Root Port 2 - 1C12
[0000F000 - 0000F03F] Intel(R) HD Graphics Family
[0000F040 - 0000F05F] Intel(R) 6 Series/C200 Series Chipset Family SMBus Controller - 1C22
[0000F060 - 0000F07F] Intel(R) 6 Series/C200 Series Chipset Family 6 Port SATA AHCI Controller - 1C03
[0000F0A0 - 0000F0A3] Intel(R) 6 Series/C200 Series Chipset Family 6 Port SATA AHCI Controller - 1C03
[0000F0B0 - 0000F0B7] Intel(R) 6 Series/C200 Series Chipset Family 6 Port SATA AHCI Controller - 1C03
[0000F0C0 - 0000F0C3] Intel(R) 6 Series/C200 Series Chipset Family 6 Port SATA AHCI Controller - 1C03
[0000F0D0 - 0000F0D7] Intel(R) 6 Series/C200 Series Chipset Family 6 Port SATA AHCI Controller - 1C03
[0000FFFF - 0000FFFF] Motherboard resources
[0000FFFF - 0000FFFF] Motherboard resources

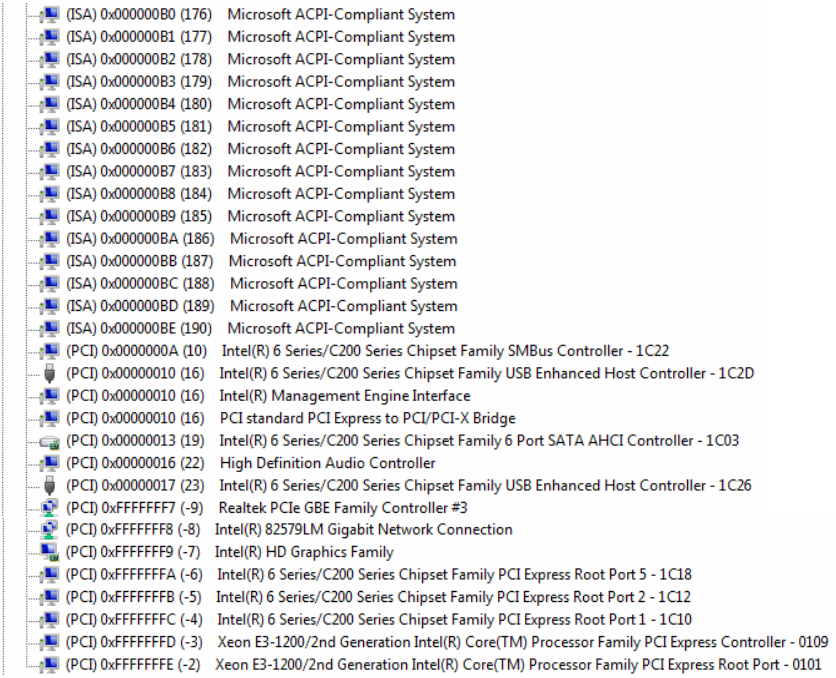
B.2 Memory Address Map



B.3 IRQ Mapping Chart



(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



B.4 DMA Channel Assignments