ACP-5185

18.5" Intel® Core™ i7/i5 Processor

High Brightness

Fanless Multi-Touch Panel PC

ACP-5185 Manual 4th Ed
January 2013

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Packing List

Before you begin installing your Panel PC, please make sure that the following items have been shipped:

- ACP-5185 Infotainment Multi-Touch Panel PC
- HDD screws
- Product DVD

  Contains User's Manual (in PDF format), Drivers and Utilities

If any of these items are missing or damaged, you should 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 reliable 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 UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE THE EQUIPMENT.

16. External equipment intended for connection to signal input/output or other connectors, shall comply with relevant UL / IEC standard (e.g. UL 1950 for IT equipment and UL 60601-1 / IEC 60601 series for systems – shall comply with the standard IEC 60601-1-1, Safety requirements for medical electrical systems. Equipment not complying with UL 60601-1 shall be kept outside the patient environment, as defined in the standard.

17. When the temperature of CPU is higher than 35°C, the frequency of CPU will be adjusted automatically. For example, if the temperature of Intel Core i7 is 40°C, the frequency of the CPU will be between 1.8~1.3 GHz.

Caution:

It may cause the danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer.

Classification

1. Degree of production against electric shock: not classified
2. Degree of protection against the ingress of water: IPX0
3. Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.
4. Mode of operation: Continuous
5. Type of protection against electric shock: Class I equipment

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.

UL Module Description

	*ACP-5185 AC modules are developed to suitable for the Classification Mark requirement*

Safety Symbol Description

The following safety symbols are further explanations for your reference.

	*Medical equipment with respect to electric shock, fire and mechanical hazards only in accordance with UL 60601-1, and CAN/CSA C22.2 NO. 601.1*
	*Attention, consult ACCOMPANYING DOCUMENTS.*
	*Ground wire* *Protective Ground wire.*
	*Medical equipment with respect to electric shock, fire and mechanical hazards only in accordance with UL 60601-1, and CAN/CSA C22.2 NO. 601.1*

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。

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Chapter

1

General Information

1.1 Introduction

The ACP-5185 is a Multi-Touch Infotainment Panel PC with superior onboard Intel® Core™ i7/i5 processor-based computer. It is a PC-based system with 18.5" true color TFT LCD display, integrated multimedia functions make them the perfect platforms to build comprehensive lifestyle computing applications.

The ACP-5185 includes all the features of a powerful computer into a slim and attractive chassis. The ACP-5185 has 300 nits TFT display with 1366 x 768 resolution. This model equips two-point Multi-Touch Window design and is easy to clean. Moreover, it is IPX1 100% water-proof that can be installed in harsh environments. Its front bezel is IP-65/NEMA4 for auxiliary water-proof protection. In addition, the ACP-5185 deploys 7H hardness Anti-Scratch Surface to avoid accidental damage.

The ACP-5185 supports one 2.5" SATA Hard Disk Drive and one CompactFlash™ slot for the storage functions, and one Mini-Card expansion. Moreover, it supports Smart Card Reader, RFID, MSR, Bluetooth, Skype phone, and camera to fulfill the demands of versatile applications.

1.2 Features

- 18.5” WXGA (1366 x 768) Fanless TFT LCD Display
- Easy-To-Clean: Multi-Touch Window Design (Two-Point)
- Superior Intel® Core™ i7/i5 Processor
- IPx1 100% Water-Proof
- Anti-Scratch Surface (7H Hardness)
- Smart Card Reader/ RFID/ MSR/ Bluetooth/ Skype Phone/ Camera Support (Optional)

1.3 Specification

System

● Processor	Onboard Intel® Core™ i7/i5 Processor
● System Memory	DDR3 SODIMM x 1, Max. 4 GB
● LCD / CRT Controller	Integrated graphics in Intel® QM57
● I/O Port	USB2.0 x 6 (2 on side; 4 on rear) RS-232 x 1 Line-out x 1 VGA x 1
● Storage Disk Drive	2.5" SATA Hard Disk Drive x 1; CompactFlash™ slot x 1 (Internal)
● Expansion	Mini Card x 1
● OS Support	Windows® XP (T/S: Single point), Linux (T/S: Single point), Windows®7 (T/S: Multi-point)

Mechanical

● Construction	IP-65/ NEMA4 for front bezel, IPX1 for chassis
● Mounting	VESA 100
● Dimension	18.11"(W) x 12.2"(H) x 3.39"(D) (460mm x 310mm x 86mm)
● Carton Dimension	26" x 8.11" x 19.53'' (661mm x 206mm x 496mm)

- Net Weight 15.4 lb (7 kg)
- Gross Weight 19.8 lb (9 kg)

Environmental

- Operating Temperature $32^{o}F$~$104^{o}F$ ($0^{o}C$~$40^{o}C$) (Ambient With Airflow)
- Storage Temperature $-4^{o}F$~$140^{o}F$ ($-20^{o}C$~$60^{o}C$)
- Storage Humidity 10%~95% @ $40^{o}C$, non-condensing
- Vibration 1 g rms/ 5-500Hz/ Random Operation (HDD)
- Shock 20 G peak acceleration (11 msec. duration)
- EMC CE/FCC Class A

Power Supply

- DC Input 84W DC 12V, with AC power adapter with lock

LCD

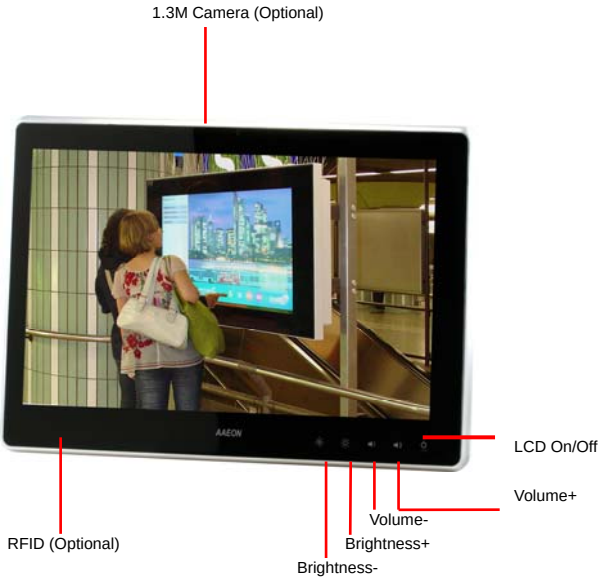
- Display Type 18.5" TFT-LCD, CCFL
- Max. Resolution 1366 x 768
- Max. Colors 16.7 M colors (6/8-bit for R, G, B)
- Luminance (cd/m^2) 300 cd/m^2
- Viewing Angle 170º (H), 160º (V)
- Backlight CCFL

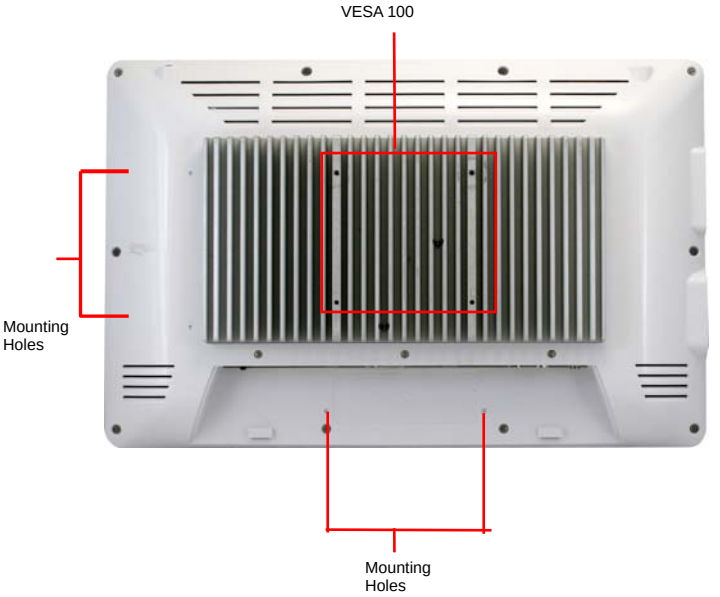
- Backlight MTBF (Hours) 50,000

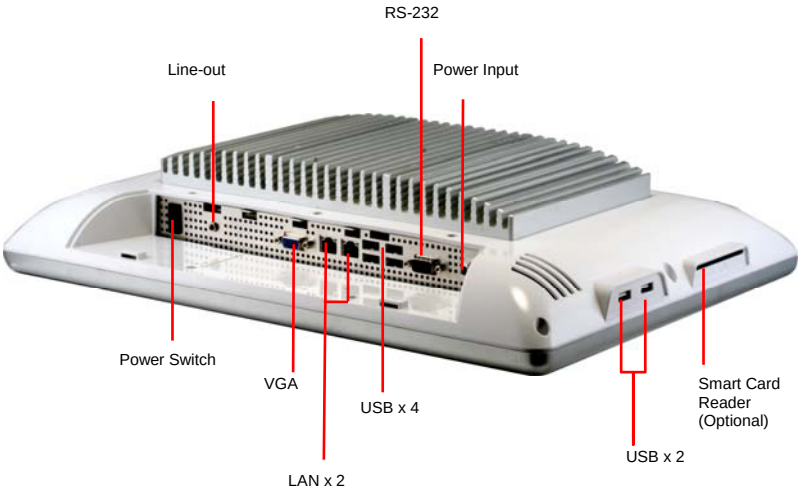
Touchscreen

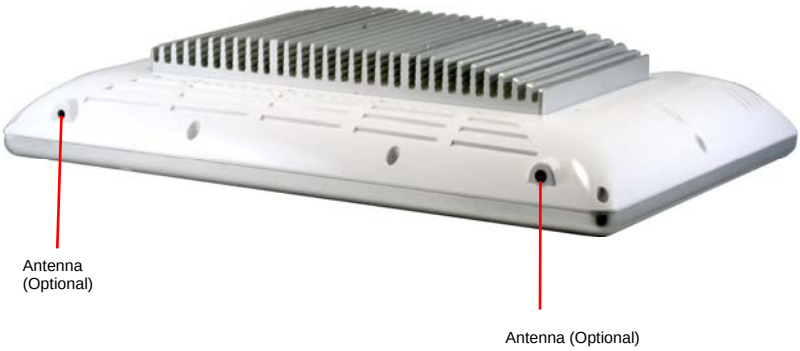
- Type Projected Capacitive Multi-Touch (Windows® 7)
- Light Transmission 90%
- Lifetime (times) ---

1.4 General Information




VESA 100
Mounting Holes
Mounting Holes


RS-232
Line-out
Power Input
Power Switch
VGA
USB x 4
LAN x 2
Smart Card
Reader
(Optional)
USB x 2


Antenna
(Optional)
Antenna (Optional)

Chapter

2

Hardware Installation

2.1 Safety Precautions

Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 A Quick Tour of the ACP-5185

Front

Rear

I/O

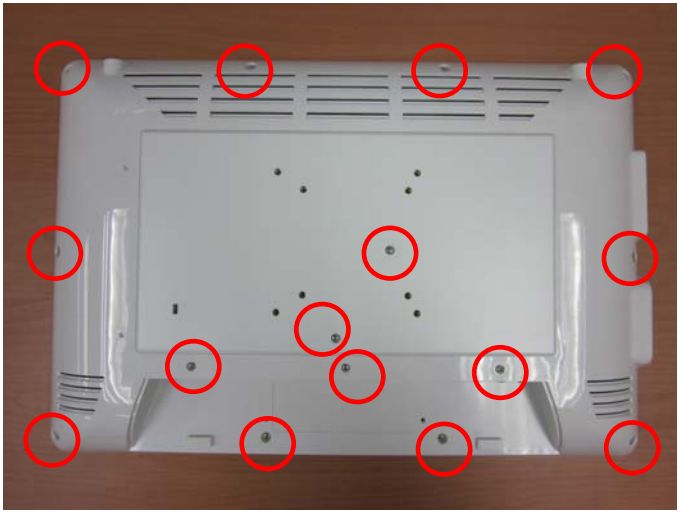
Cable Cover (Optional)

Note 1: You may turn on the power by cutting and destroying the protective cover as it shows below.

Note 2: The “Anti-Drop Kit” can help on preventing the cable drop from the connector

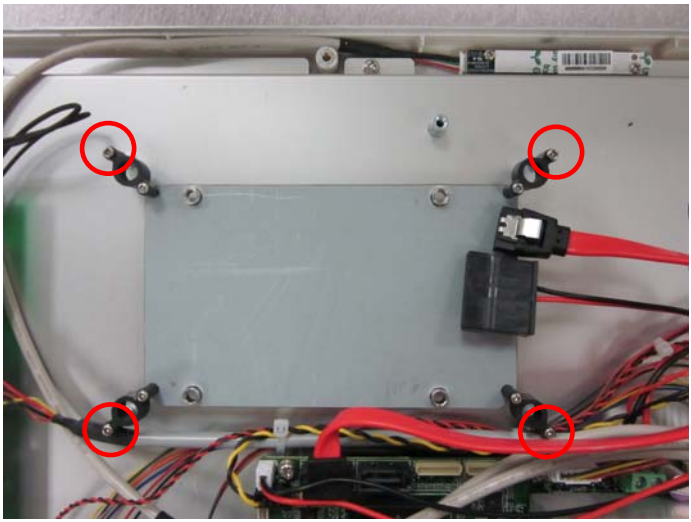
2.3 2.5” Hard Disk Drive (HDD) Installation

Step 1: Unscrew the rear cover screws (15 screws)



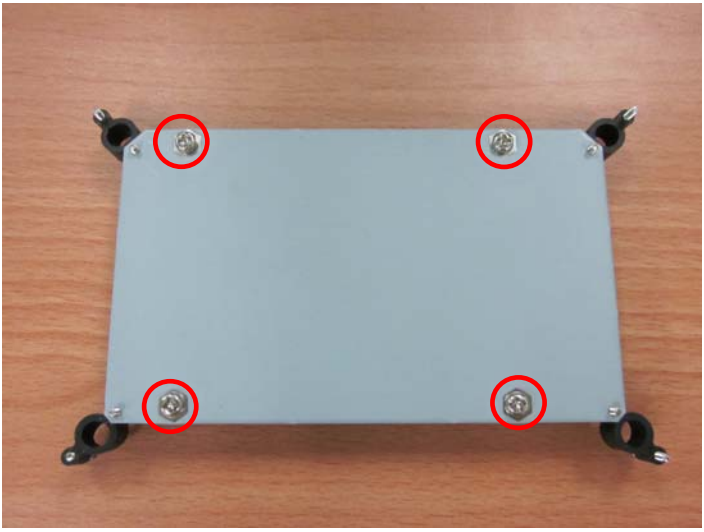
Step 2: Remove EMI Cover (5 screws)

Step 3: Remove HDD Bracket (4 screws)

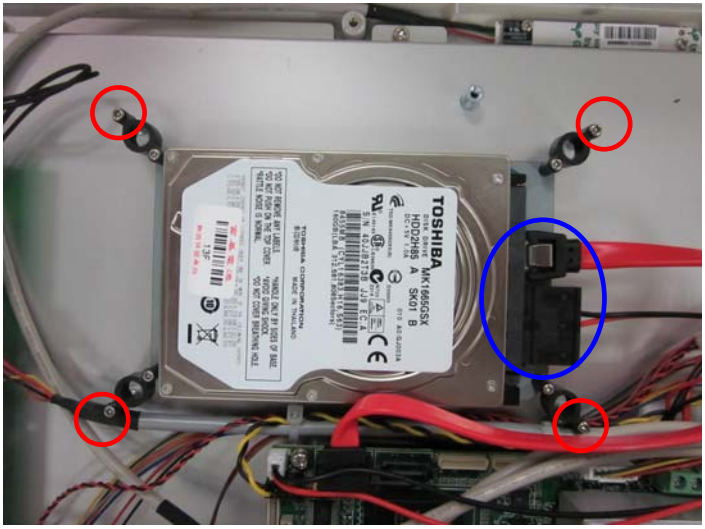


Step 4: Get the HDD and HDD Bracket ready

Step 5: Fasten the four screws to fix HDD Bracket and HDD



Step 6: Connect the SATA and power cables to the HDD and fasten the four screws to fix the HDD Bracket



Chapter

3

AMI BIOS Setup

3.1 System Test and Iinitialization

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 AEC-5185 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

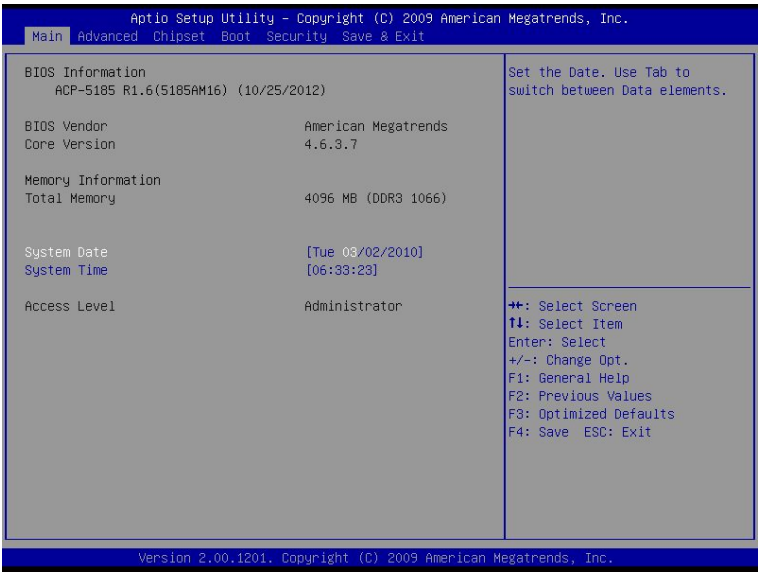
Set setup administrator password.

Save & Exit

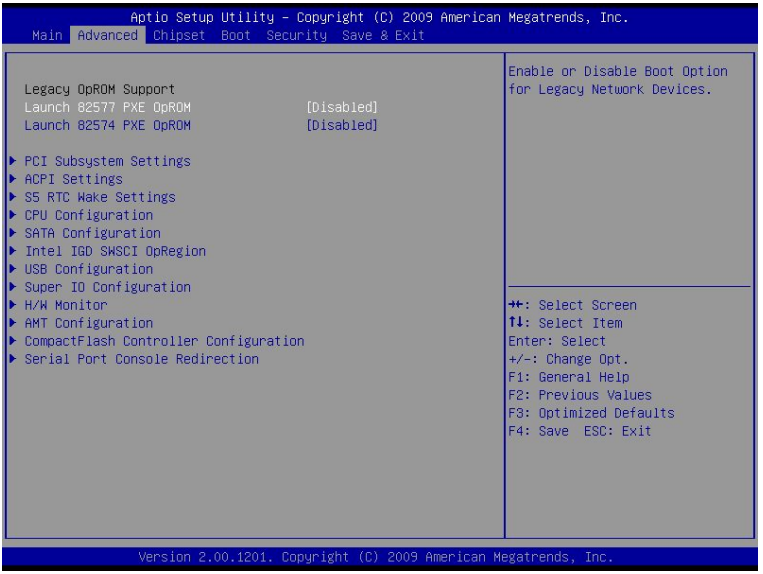
Exit system setup after saving the changes.

Setup Menu

Setup submenu: Main



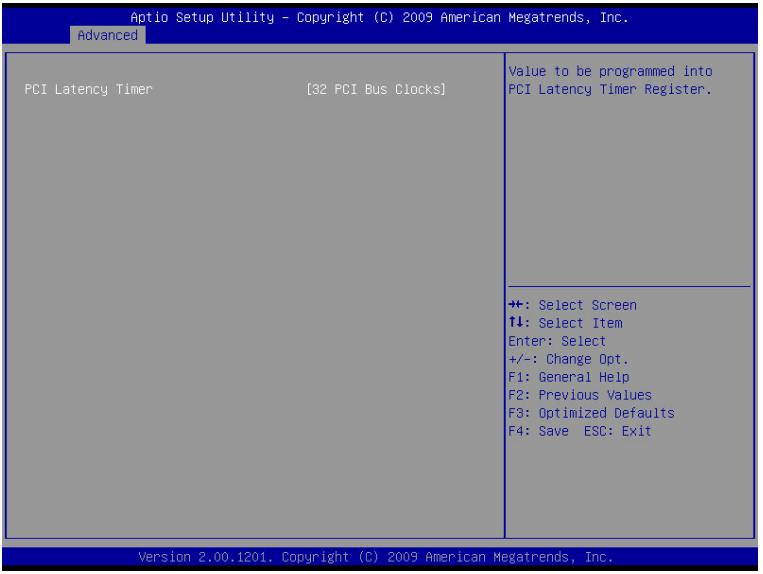
Setup submenu: Advanced



Options summary:

Launch 82577 PXE OpROM	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable Legacy Boot Option for 82577.		
Launch 82574 PXE OpROM	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable Legacy Boot Option for 82574.		

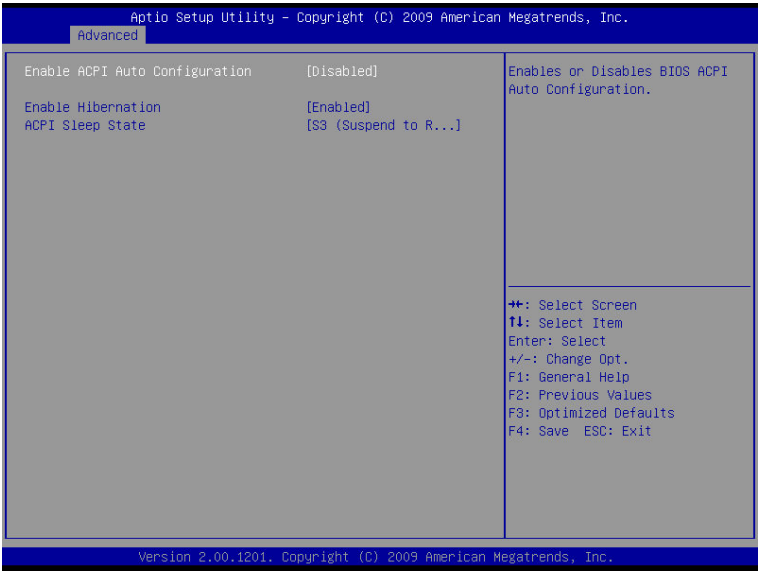
PCI Subsystem Setting



Options summary:

PCI Latency Timer	32 PCI Bus Clocks	Optimal Default, Failsafe Default
	64 PCI Bus Clocks	
	96 PCI Bus Clocks	
	128 PCI Bus Clocks	
	160 PCI Bus Clocks	
	192 PCI Bus Clocks	
	224 PCI Bus Clocks	
	248 PCI Bus Clocks	
Value to be programmed into PCI Latency Timer Register		

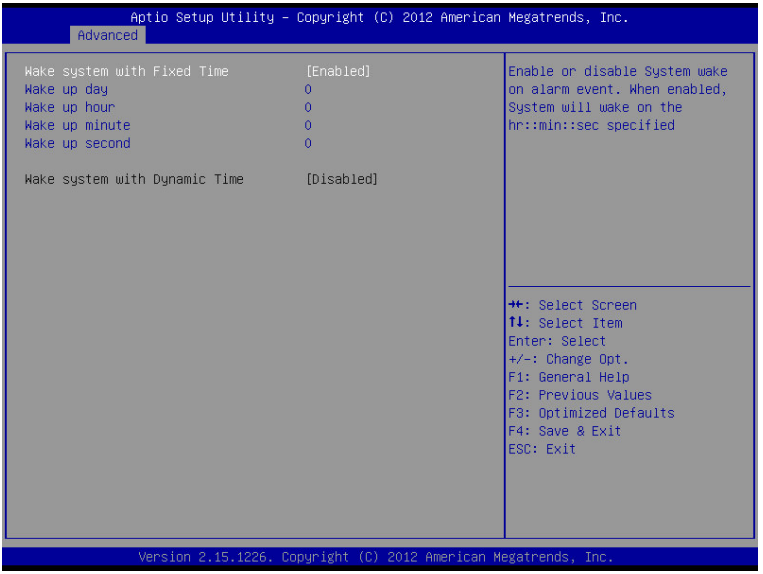
ACPI Settings



Options summary:

Enable ACPI Auto Configuration	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enables or Disables BIOS ACPI Auto Configuration		
Enable Hibernation	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.		
ACPI Sleep State	Suspend Disabled	
	S1 only (CPU Stop Clock)	
	S3 only (Suspend to RAM)	Optimal Default, Failsafe Default
Select the highest ACPI sleep state the system will enter, when the SUSPEND button is pressed.		

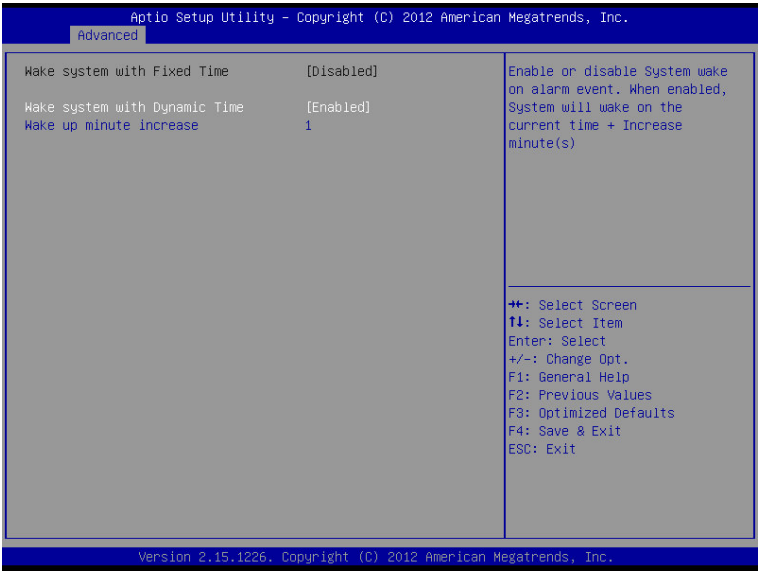
S5 RTC Wake Settings (Fixed Time)



Options summary:

Wake system with Fixed Time	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable System wake on alarm event. When enabled, System will wake on the hr:min:sec specified		
Wake up day	0-31	Default 0
Select 0 for daily system wake up, 1-31 for witch day of the moth that you would like the system to wake up.		
Wake up day	0-23	Default 0
Select 0-23 For example enter 3 for 3am and 15 for 3pm		
Wake up day	0-59	Default 0
Select 0-59		
Wake up day	0-59	Default 0
Select 0-59		

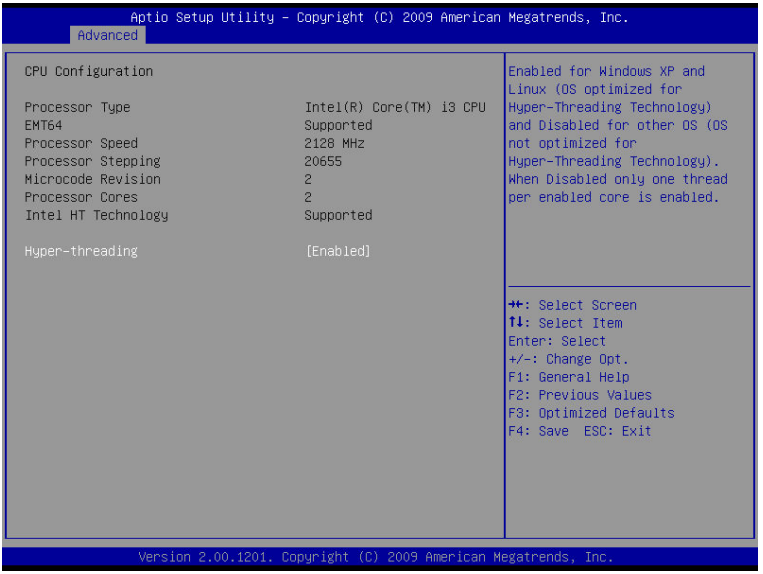
S5 RTC Wake Settings (Dynamic Time)



Options summary:

Wake system with Dynamic Time	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable System wake on alarm event. When enabled, System will wake on current time + Increases minutese(s)		
Wake up day	1-5	Default 1
Select 1-5		

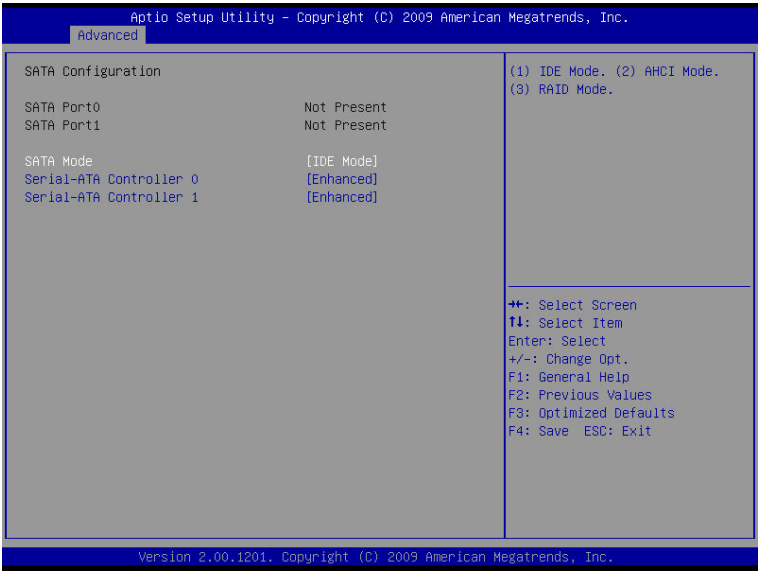
CPU Configuration



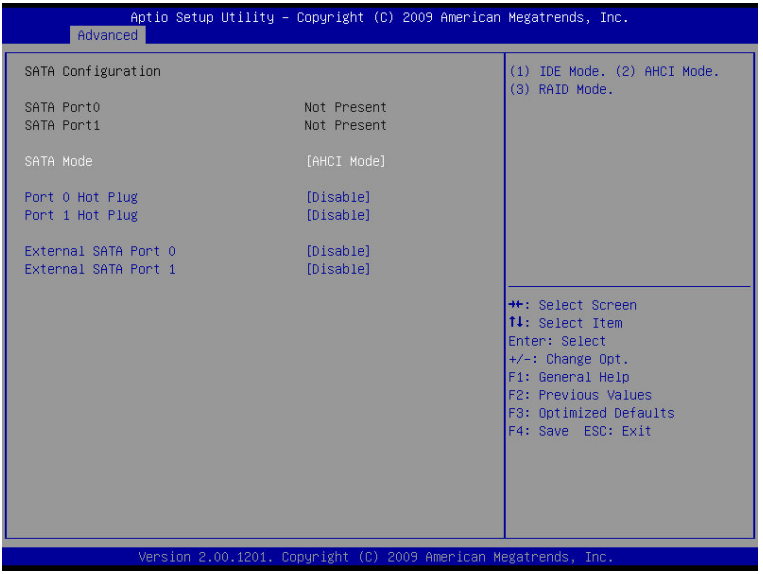
Options summary:

Hyper-Threading	Disabled	Optimal Default, Failsafe Default
	Enabled	
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.		

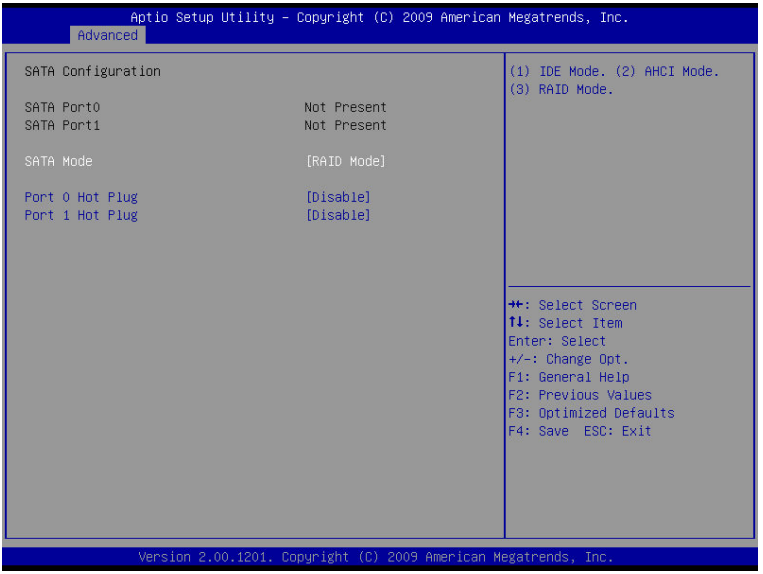
IDE Configuration (IDE)



IDE Configuration (AHCI)



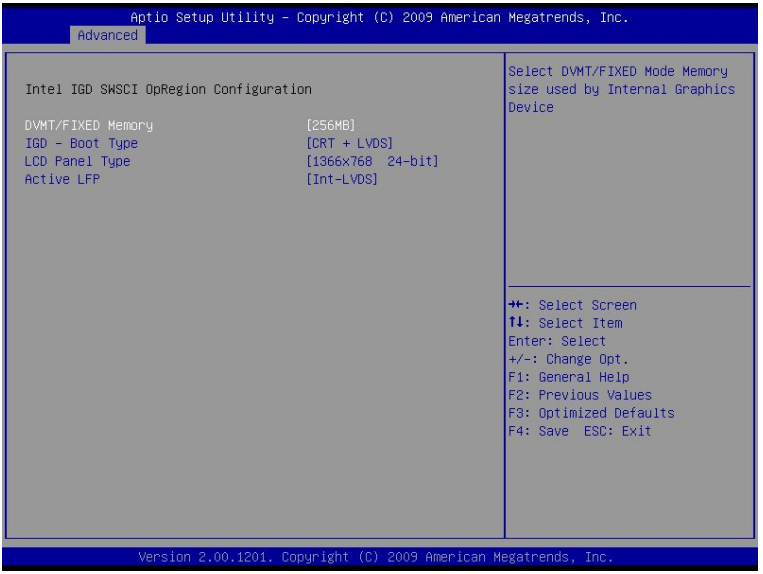
IDE Configuration (RAID)



Options summary:

SATA Mode	Disable	Optimal Default, Failsafe Default
	IDE	
	AHCI	
	RAID	
IDE: Configure SATA controllers as legacy IDE AHCI: Configure SATA controllers to operate in AHCI mode RAID: Configure SATA controllers to operate in RAID mode		
Serial-ATA Controller #	Disabled	
	Enhanced	Optimal Default, Failsafe Default
Enable/Disable Serial ATA Controller		
Port # Hot plog	Disabled	Optimal Default, Failsafe Default
	Enabled	
SATA Ports Hot Plug Support		
External SATA Port #	Disabled	Optimal Default, Failsafe Default
	Enabled	
eSATA Ports Support		

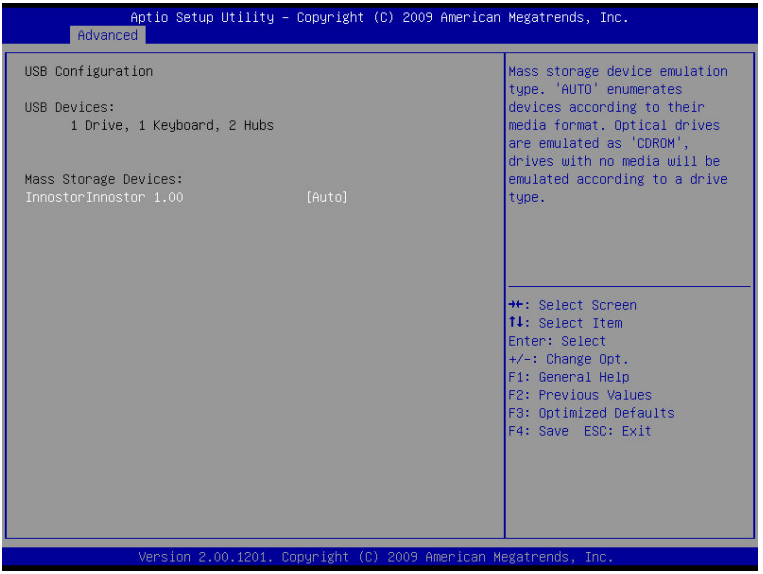
Intel IGD SWSCI OpRegion



Options summary:

DVMT/FIXED Memory	128MB	
	256MB	Optimal Default, Failsafe Default
	Maximum	
Select DVMT/FIXED Mode Memory size used by Internal Graphics Device		
IGD – Boot Type	VBIOS Default	
	CRT	
	LVDS	
	CRT + LVDS	Optimal Default, Failsafe Default
Select the Video Device which will be activated during POST. This has no effect if external graphics present.		
LCD Panel Type	1366x768 24-bit	Optimal Default, Failsafe Default
Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.		
Active LFP	No LVDS	
	Int-LVDS	Optimal Default, Failsafe Default
Select the Active LFP configuration. No LVDS: VBIOS does not enable LVDS. Int-LVDS: VBIOS enables LVDS driver by Integrated encoder.		

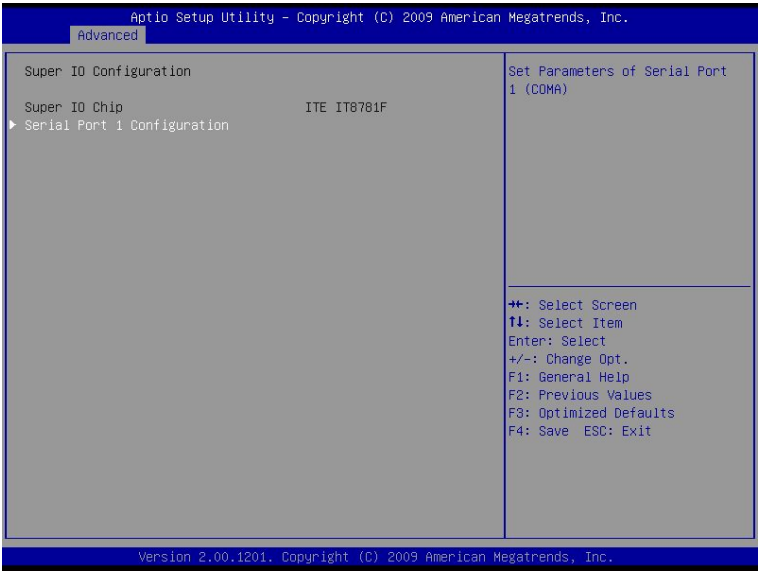
USB Configuration



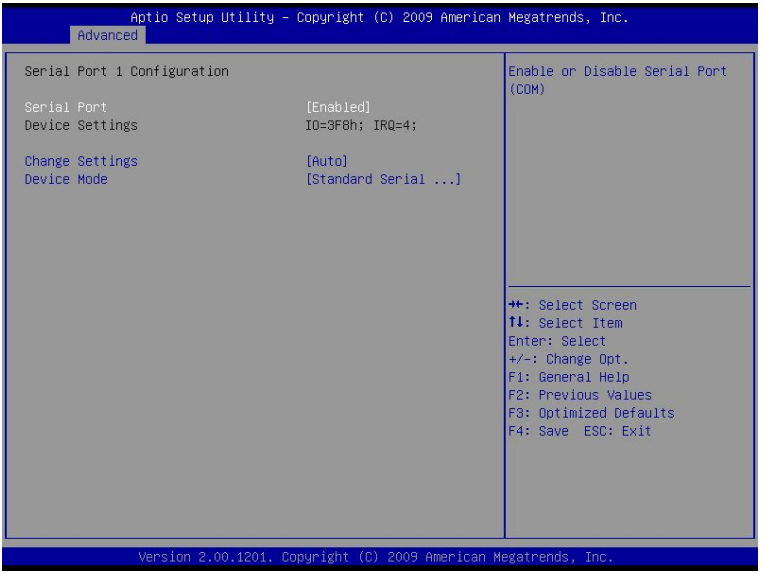
Options summary:

Device Name (Emulation Type)	Auto	Optimal Default, Failsafe Default
	Floppy	
	Forced FDD	
	Hard Disk	
	CDROM	
If Auto. USB devices less than 530MB will be emulated as Floppy and remaining as Floppy and remaining as hard drive. Forced FDD option can be used to force a HDD formatted drive to boot as FDD(Ex. ZIP drive)		

Super IO Configuration



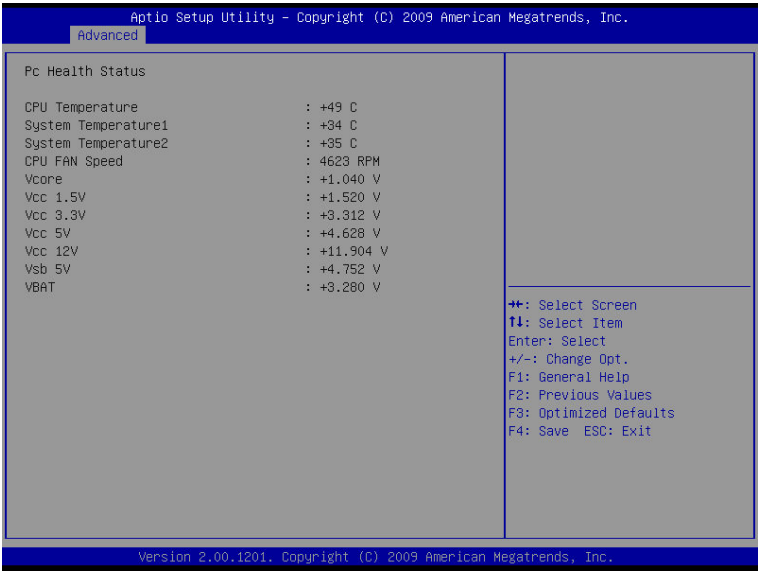
Serial Port 1 Configuration



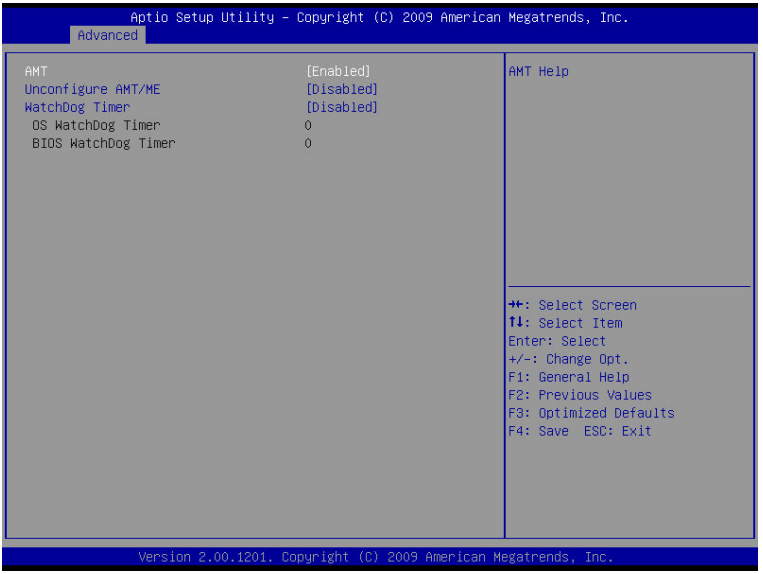
Options summary:

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disable correspond serial port.		
Change Settings	Auto	Default
	IO=3F8h; IRQ=4;	
	IO=3F8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=2F8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=3E8h; IRQ=3,4,5,6,7,10,11,12;	
	IO=2E8h; IRQ=3,4,5,6,7,10,11,12;	
Allows BIOS to select serial port resource.		
Device Mode	Standard Serial Port Mode	Default
	IrDA 1.0 (HP SIR) Mode	
	ASKIR Mode	
Change the serial port mode.		

H/W Monitor


Aptio Setup Utility – Copyright (C) 2009 American Megatrends, Inc.
Advanced
Pc Health Status
CPU Temperature : +49 C
System Temperature1 : +34 C
System Temperature2 : +35 C
CPU FAN Speed : 4623 RPM
Vcore : +1.040 V
Vcc 1.5V : +1.520 V
Vcc 3.3V : +3.312 V
Vcc 5V : +4.628 V
Vcc 12V : +11.904 V
Vsb 5V : +4.752 V
VBAT : +3.280 V
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save ESC: Exit
Version 2.00.1201. Copyright (C) 2009 American Megatrends, Inc.

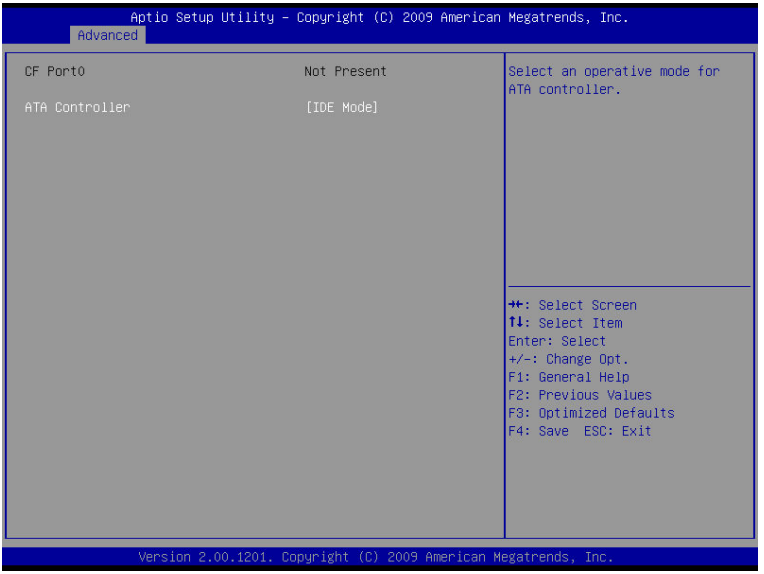
AMT Configuration



Options summary:

AMT	Disabled	Optimal Default, Failsafe Default
	Enabled	
Intel AMT Enable/Disable		
Unconfigure AMT/ME	Disabled	Optimal Default, Failsafe Default
	Enabled	
Perform AMT/ME unconfigure without password operation		
WatchDog Timer	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable/Disable WatchDog Timer		
OS WatchDog Timer	0~255 (0)	Optimal Default, Failsafe Default
Set OS WatchDog Timer		
BIOS WatchDog Timer	0~255 (0)	Optimal Default, Failsafe Default
Set BIOS WatchDog Timer		

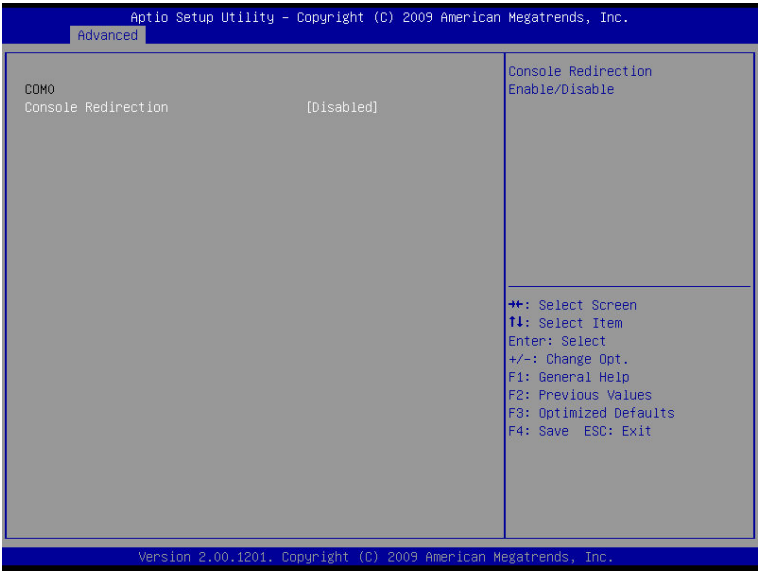
CompactFlash Controller Configuration



Options summary:

ATA Controller	Disabled	
	IDE Mode	Optimal Default, Failsafe Default
Select an operative mode for ATA controller		

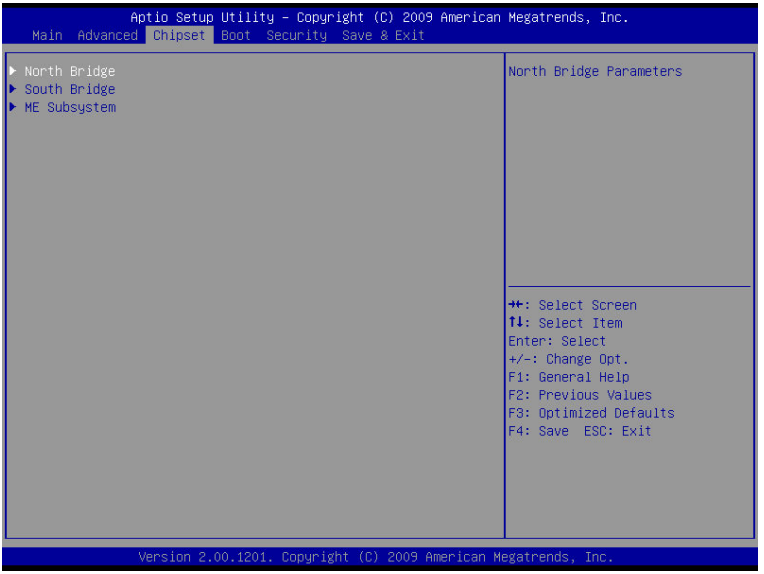
Serial Port Condole Redirection



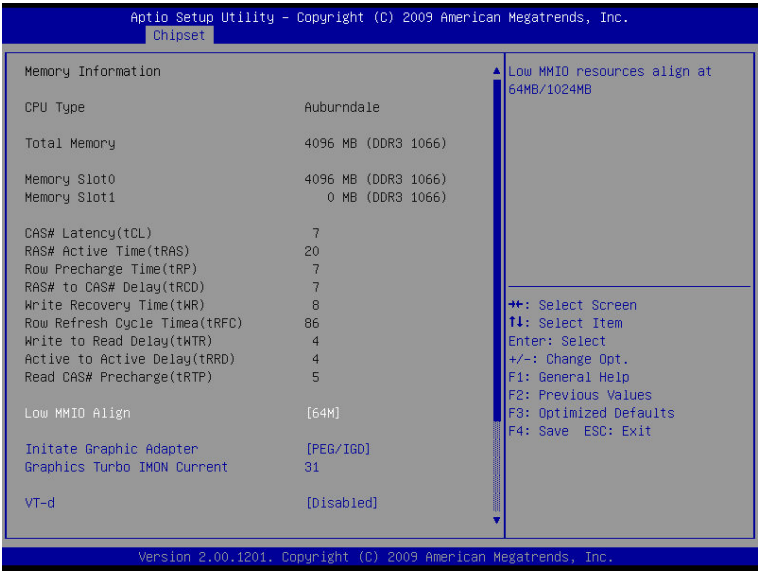
Options summary:

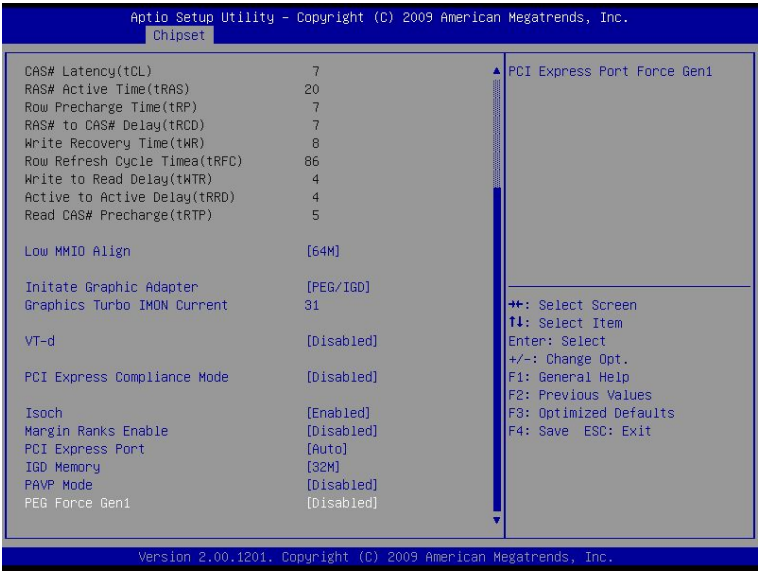
Console Redirection	Disabled	Optimal Default, Failsafe Default
	Enabled	
Console Redirection Enable/Disable		

Setup submenu: Chipset



North Bridge

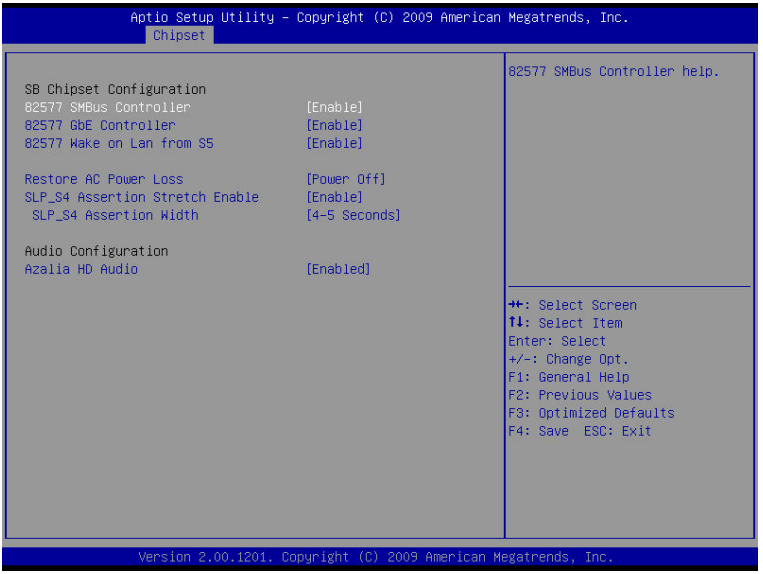




Options summary:

Low MMIO Align	64M	Optimal Default, Failsafe Default
	1024M	
Low MMIO resource align at 64MB/1024MB		
Initiate Graphic Adapter	IGD	
	PCI/IGD	
	PCI/PEG	
	PEG/IGD	Optimal Default, Failsafe Default
	PEG/PCI	
Select which graphics controller to use as the primary boot device		
Graphics Turbo IMON Current	14~31(31)	Optimal Default, Failsafe Default
Graphics turbo IMON current values supported		
VT-d	Disabled	Optimal Default, Failsafe Default
	Enabled	
Check to enable VT-d function on MCH		
PCI Express Compliance Mode	Disabled	Optimal Default, Failsafe Default
	Enabled	
PCI Express Compliance Testing Mode		
Isoch	Disabled	
	Enabled	Optimal Default, Failsafe Default
Isoch Enable/Disable		
MarginRanks Enable	Disabled	Optimal Default, Failsafe Default
	Enabled	
MarginRanks Enable/Disable		
PCI Express Port	Disabled	
	Enabled	
	Auto	Optimal Default, Failsafe Default
PCI Express Enable/Disable		
IGD Memory	Disabled	
	32M	Optimal Default, Failsafe Default
	64M	
	128M	
UGD Share Memory Size		
PAVP Mode	Disabled	Optimal Default, Failsafe Default
	Enabled	
Select PAVP Mode used by Internal Graphics Device		
PEG Force Gen1	Disabled	Optimal Default, Failsafe Default
	Enabled	
PCI Express Port Force Gen1		

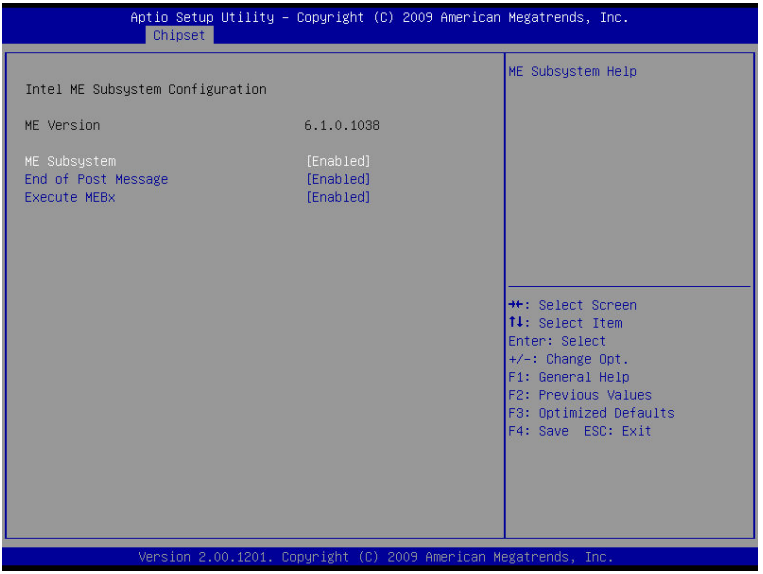
South Bridge



Options summary:

82577 SMBus Controller	Disabled	
	Enabled	Optimal Default, Failsafe Default
82577 SMBus Controller Enable/Disable		
82577 GbE Controller	Disabled	
	Enabled	Optimal Default, Failsafe Default
82577 GbE Controller Enable/Disable		
82577 Wake on LAN from S5	Disabled	
	Enabled	Optimal Default, Failsafe Default
82577 Wake on LAN from S5 Enable/Disable		
Restore AC Power Loss	Power Off	Optimal Default, Failsafe Default
	Power On	
	Last State	
Select AC power state when power is re-applied after a power failure.		
SLP_S4 Assertion Stretch Enable	Disabled	
	Enabled	Optimal Default, Failsafe Default
Select a minium assertion width of the SLP_S4# signal		
SLP_S4 Assertion Width	1 - 2 Seconds	
	2 - 3 Seconds	
	3 - 4 Seconds	
	4 - 5 Seconds	Optimal Default, Failsafe Default
Select SLP_S4 assertion width		
Azalia	Disabled	
	Enabled	Optimal Default, Failsafe Default
Control Detection of the Azalia device. Disabled = Azalia will be unconditionally disabled; Enabled = Azalia will be unconditionally enabled		

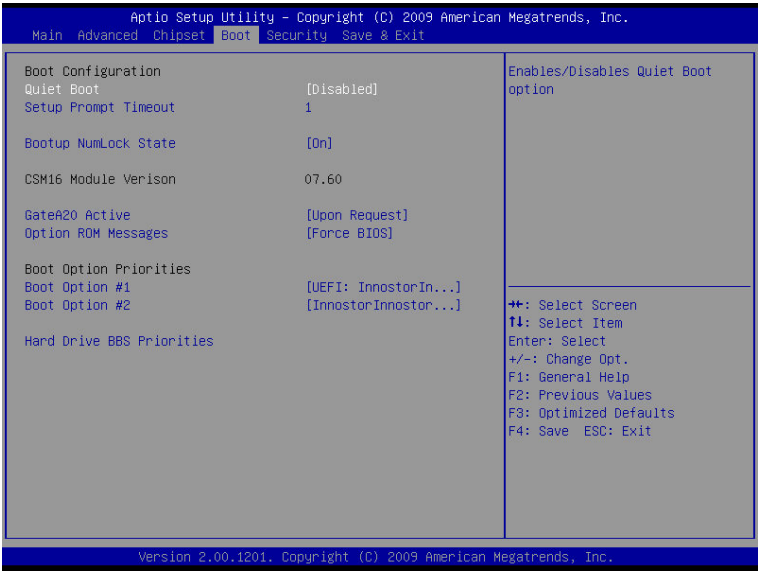
ME Subsystem



Options summary:

ME Subsystem	Disabled	Optimal Default, Failsafe Default
	Enabled	
ME Subsystem Enable/Disable		
End of Post Message	Disabled	Optimal Default, Failsafe Default
	Enabled	
End of Post Message Enable/Disable		
Execute MEBx	Disabled	Optimal Default, Failsafe Default
	Enabled	
Execute MEBx Enable/Disable		

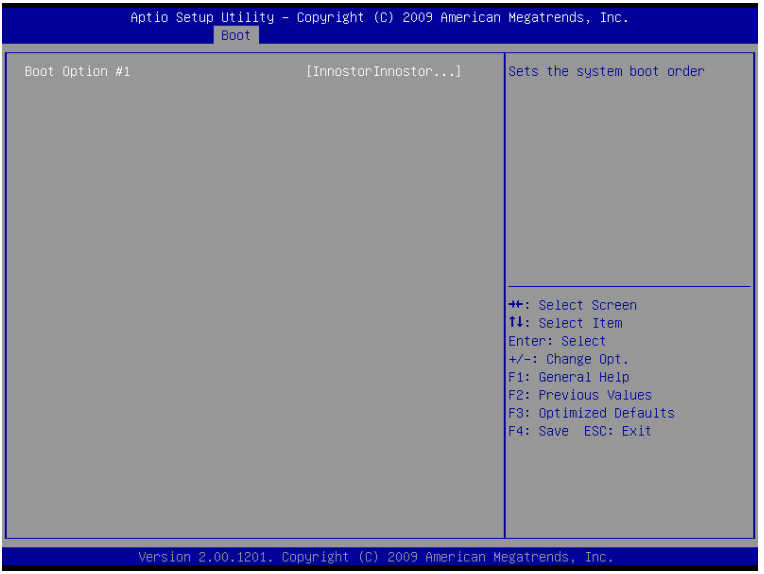
Setup submenu: Boot



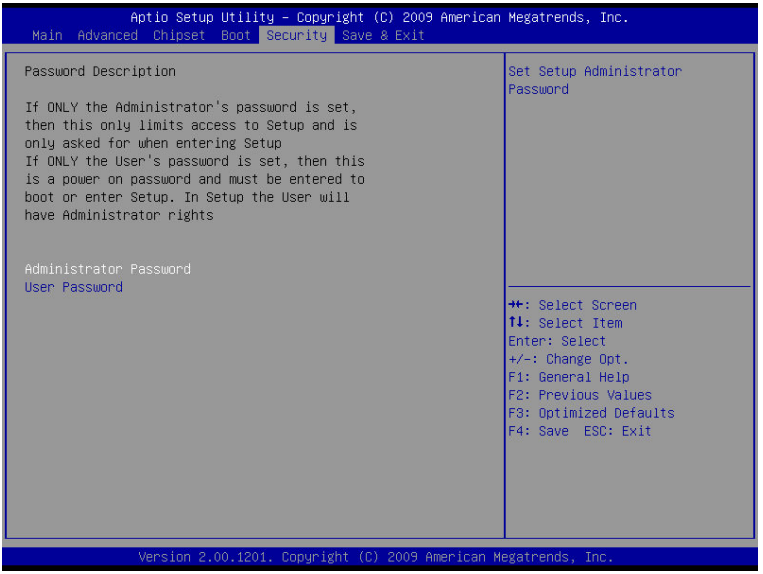
Options summary:

Quiet Boot	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable showing boot logo.		
Setup Prompt Timeout	1~65535 (1)	Optimal Default, Failsafe Default
Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.		
Bootup NumLock State	On	Optimal Default, Failsafe Default
	Off	
Select the keyboard NumLock state		
GateA20 Active	Upon Request	Optimal Default, Failsafe Default
	Always	
UPON REQUEST – GA20 can be disabled using BIOS services. ALWAYS – Do not allow disabling GA20; This option is useful when any RT code is executed above 1MB.		
Option ROM Messages	Force BIOS	Optimal Default, Failsafe Default
	Keep Current	
Set display mode for Option ROM.		

BBS Priorities



Security



Change User/Supervisor Password

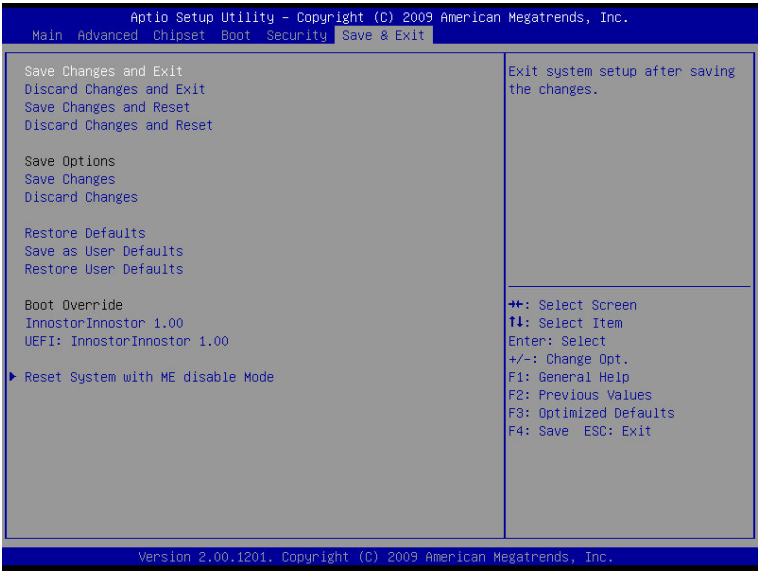
You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

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 ACP-5185 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 LAN Driver

Step 4 – Install ME Driver

Step 5 – Install Audio Driver

Step 6 – Install Touch Driver (For Windows® XP only)

Step 7 – Install Smart Card Reader Driver (Optional)

Step 8 – Install WiFi & Bluetooth Driver (Optional)

Step 9 – Install RAID & AHCI Driver

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the ACP-5185 DVD-ROM into the DVD-ROM drive. Then install the drivers from Step 1 to Step 9 in order.

Step 1 – Install Chipset Driver

1. Click on the ***Step1–CHIPSET*** folder and double click on the ***infinst_autol(9.1.1.1020).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 ***Setup.exe*** located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 3 – Install LAN Driver

1. Click on the ***Step3–LAN*** folder and double click on the ***Autorun.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 4 –Install ME Driver

1. Click on the ***Step4–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 5 – Install Audio Driver

1. Click on the ***Step5–AUDIO*** folder 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 Touch Driver (For Windows® XP only)

1. Click on the ***Step6–Touch*** folder and double click on the ***ModifyDBArea*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 7 – Install Smart Card Reader Driver (Optional)

1. Click on the ***Step7–SMART CARD READER*** folder and select the OS folder your system is
2. Double click on the ***setup.exe*** located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 8 – Install WiFi & Bluetooth Driver (Optional)

1. Click on the ***Step8–WIFI&BLUETOOTH*** 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

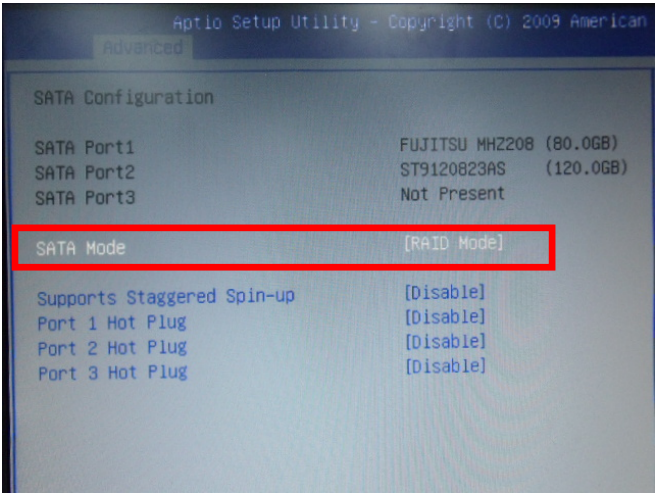
Step 9 – Install RAID & AHCI Driver

Setting RAID

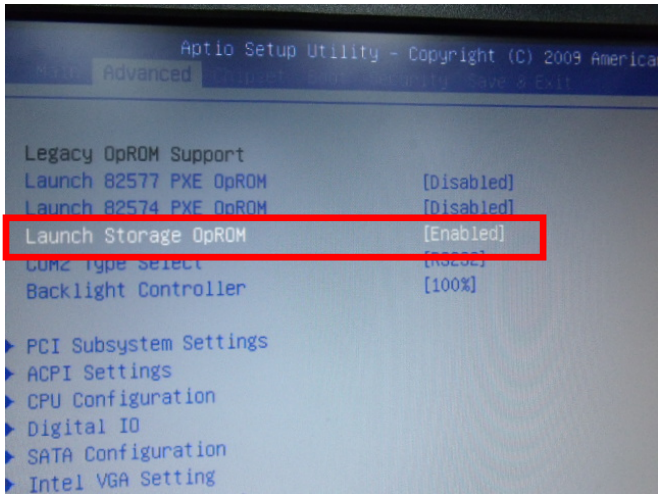
OS installation to setup RAID Mode

Step 1: Copy the files below from "***Driver CD ->Step7- RAID & AHCI"*** to Disk

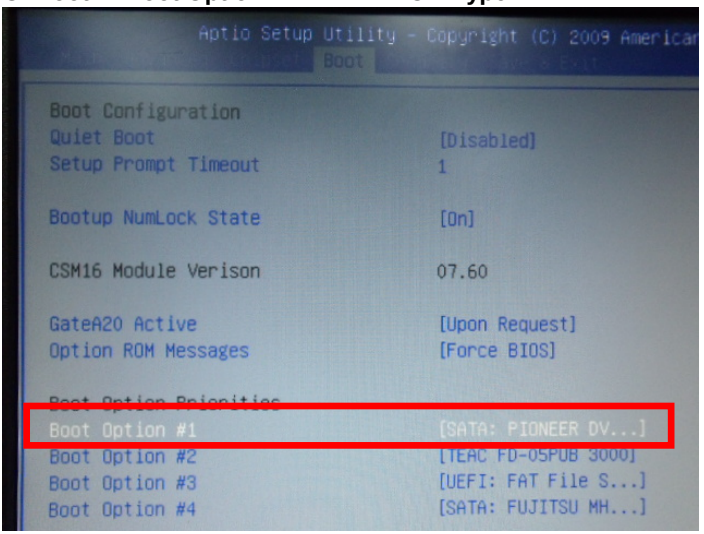
Step 2: The setting procedures " **In BIOS Setup Menu**"
A: Advanced -> SATA Configuration -> SATA Mode -> RAID Mode



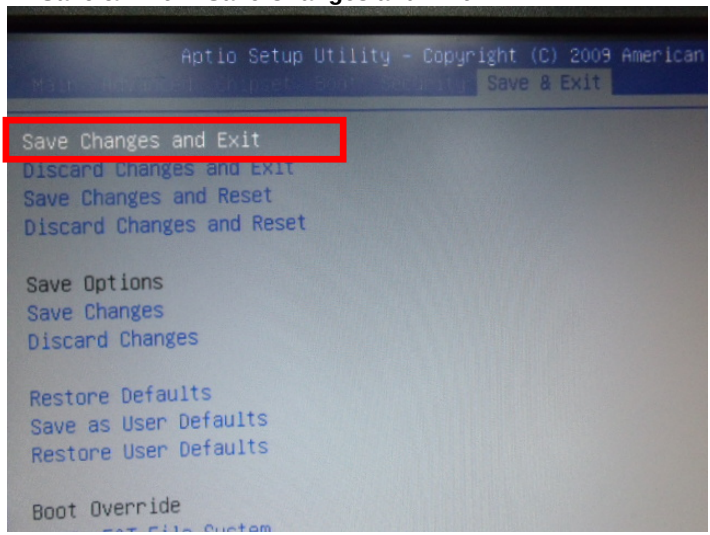
Step 3: The setting procedures "**In BIOS Setup Menu**"
B: Advanced -> Launch Storage OpROM -> Enabled



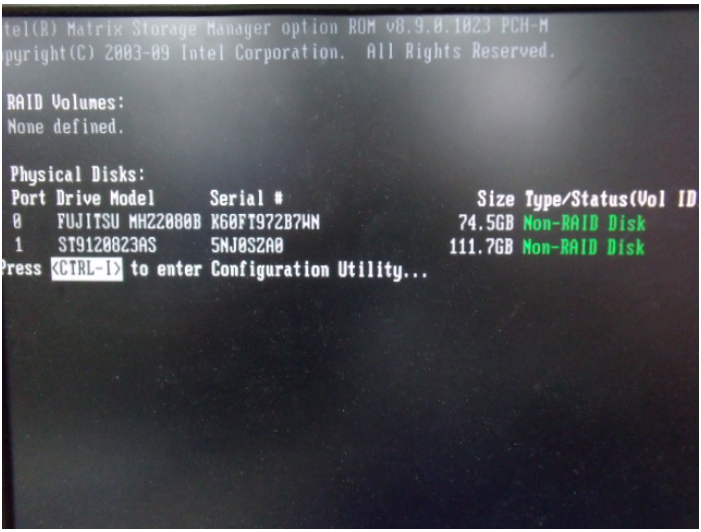
Step 4: The setting procedures "**In BIOS Setup Menu"**
C: Boot -> Boot Option #1 -> DVD-ROM Type



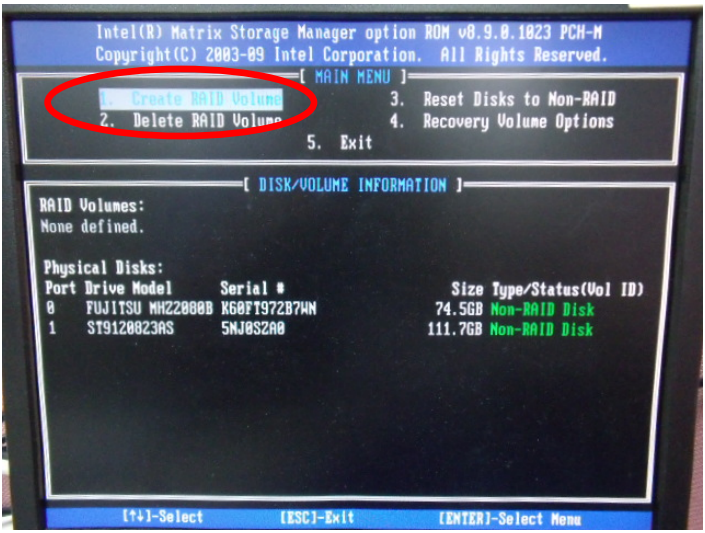
Step 5: The setting procedures "**In BIOS Setup Menu"**
D: Save & Exit -> Save Changes and Exit



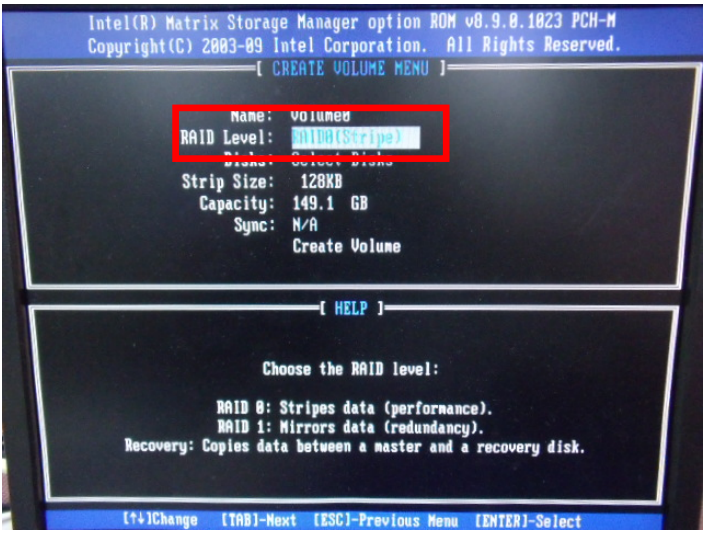
Step 6: Press **Ctrl-I** to enter **MAIN MENU**



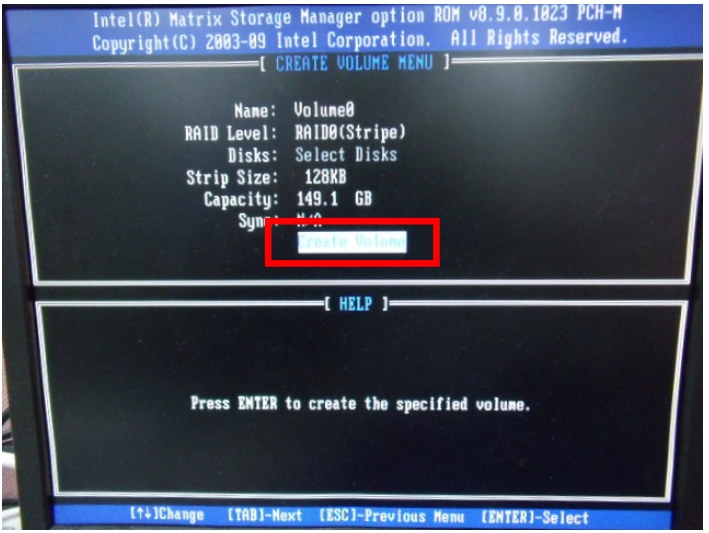
Step 7: Choose "**1.Create RAID Volume**"



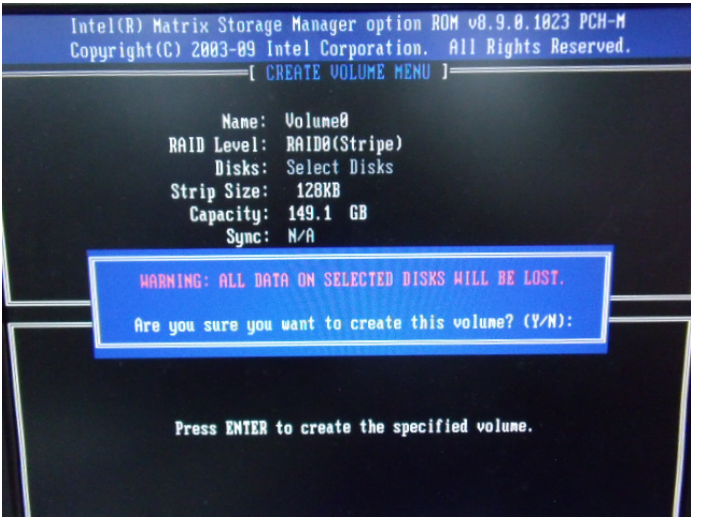
Step 8: RAID Level -> RAID0(Stripe)



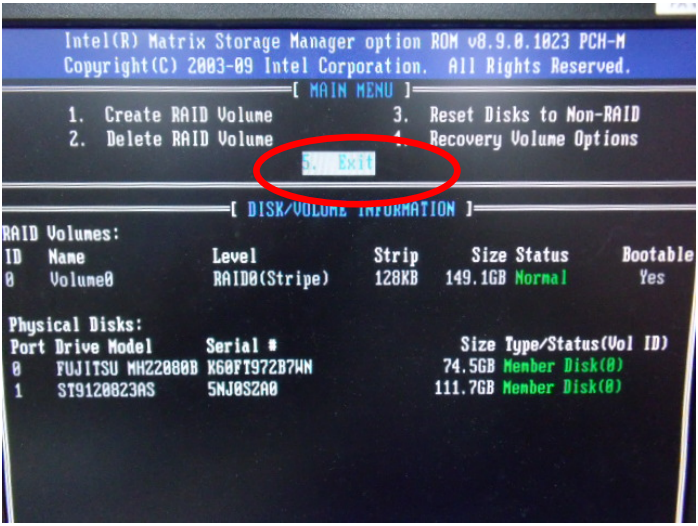
Step 9: Choose "**Create Volume**"



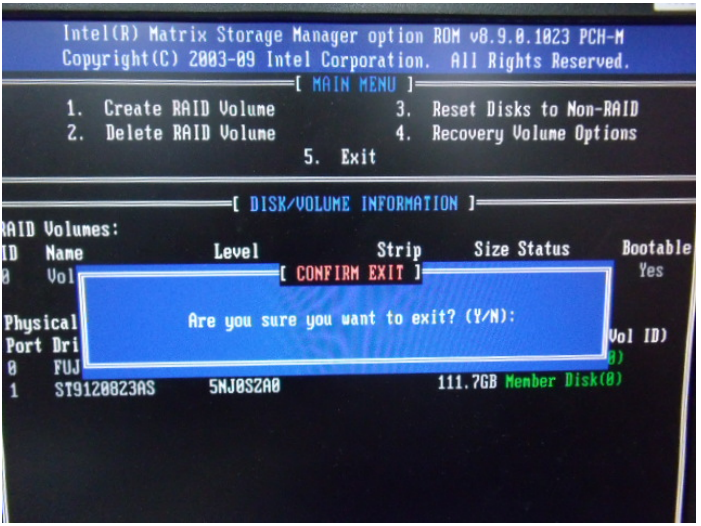
Step 10: Choose "**Y**"



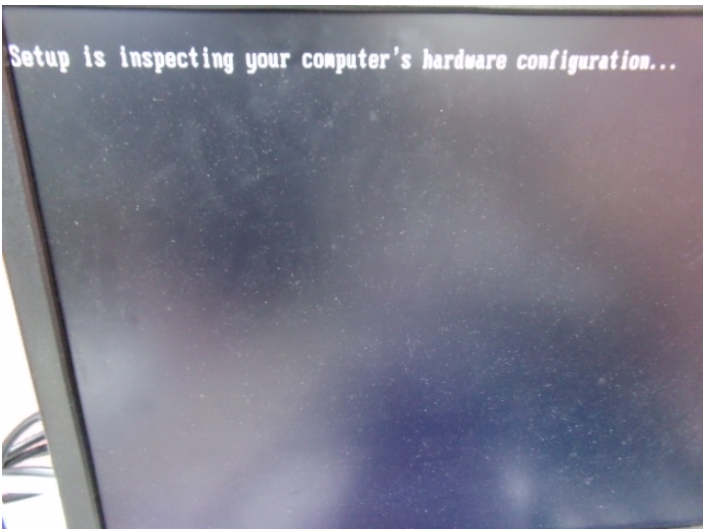
Step 11: Choose "**5. Exit**"



Step 12: Choose "**Y**"

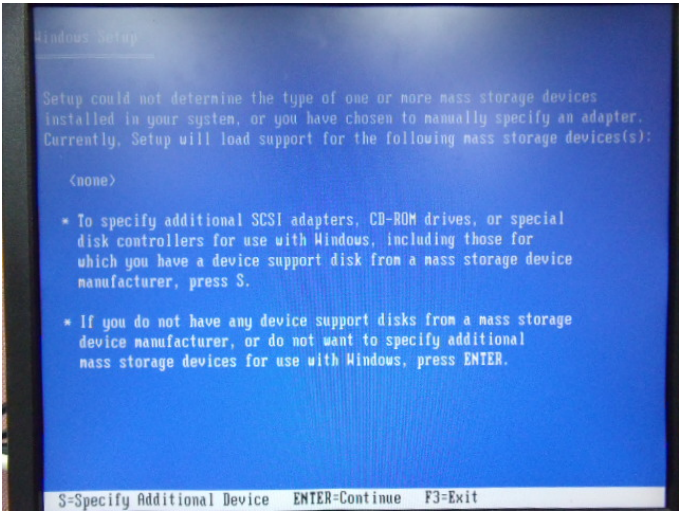


Step 13: Setup OS

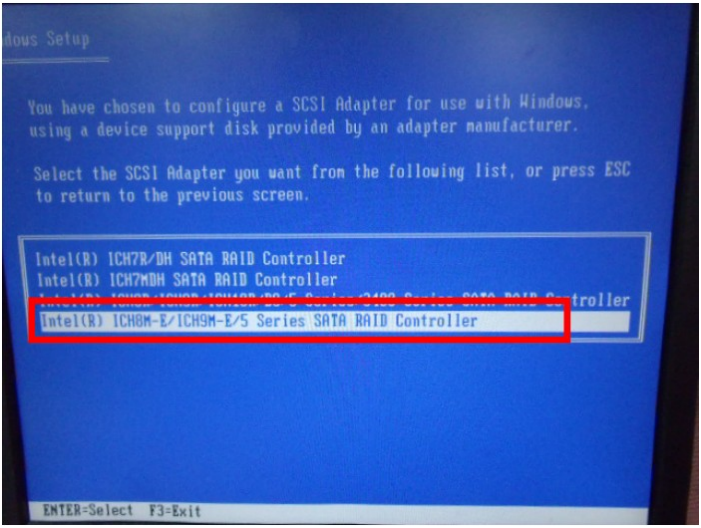


Step 14: Press "**F6**"

Step 15: Choose "**S**"

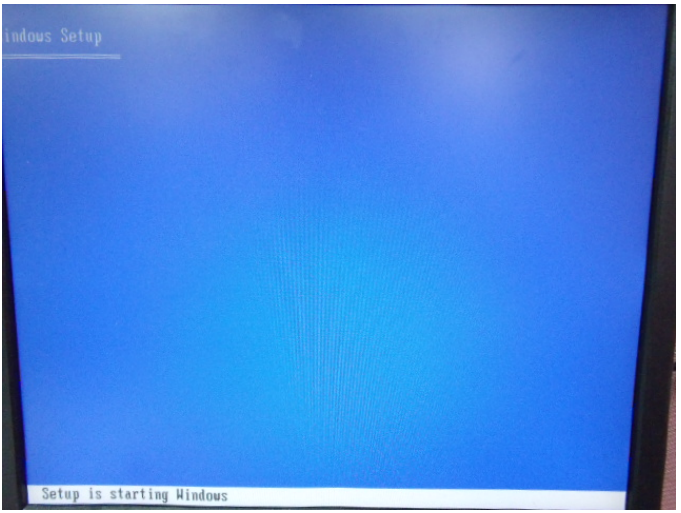


Step 16: Choose "**Intel(R) Mobile Express Chipset SATA RAID Controller"**



Step 17: It will show the model number you select and then press "**ENTER**"

Step 18: Setup is starting Windows



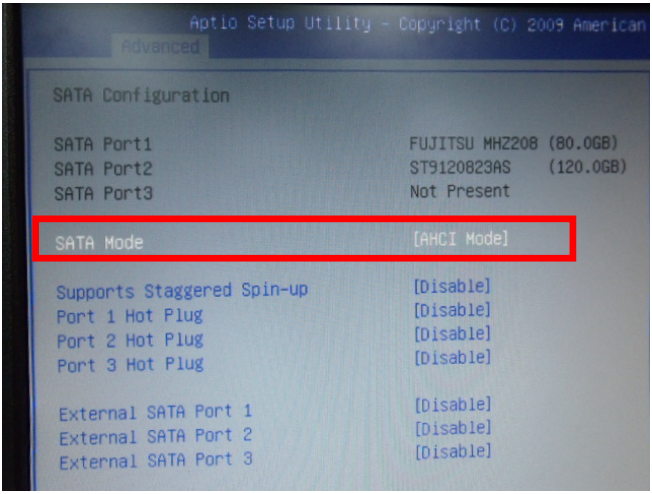
Setting AHCI

OS installation to setup AHCI Mode

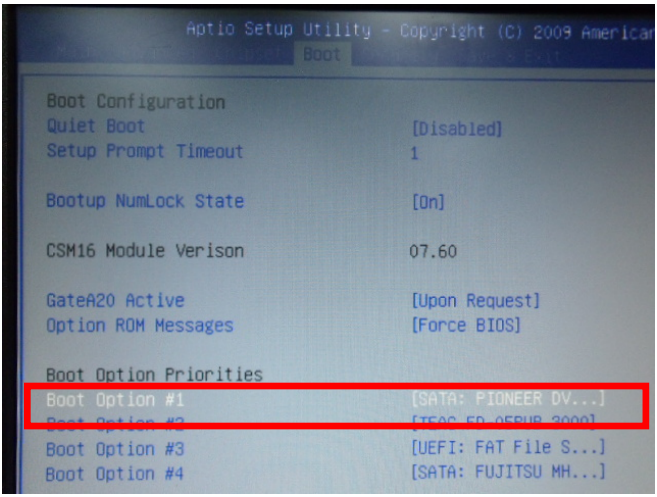
Step 1: Copy the files below from "***Driver CD -> Step7- RAID & AHCI"*** to Disk

Step 2: The setting procedures " **In BIOS Setup Menu**"

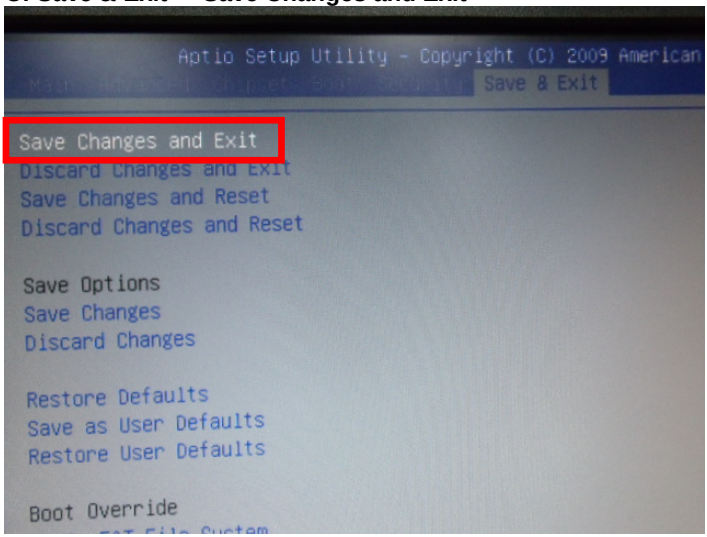
A: Advanced -> SATA Configuration -> SATA Configuration -> SATA Mode -> AHCI Mode



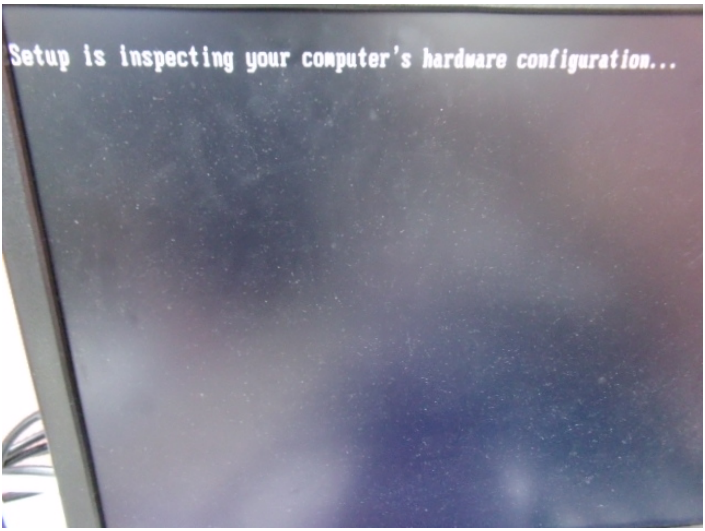
Step 3: The setting procedures "**In BIOS Setup Menu"**
B: Boot -> Boot Option #1 -> DVD-ROM Type



Step 4: The setting procedures "**In BIOS Setup Menu"**
C: Save & Exit -> Save Changes and Exit

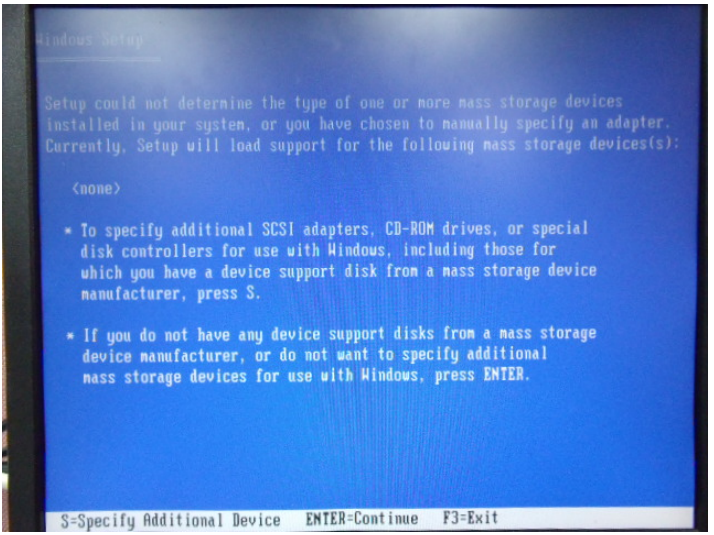


Step 5: Setup OS

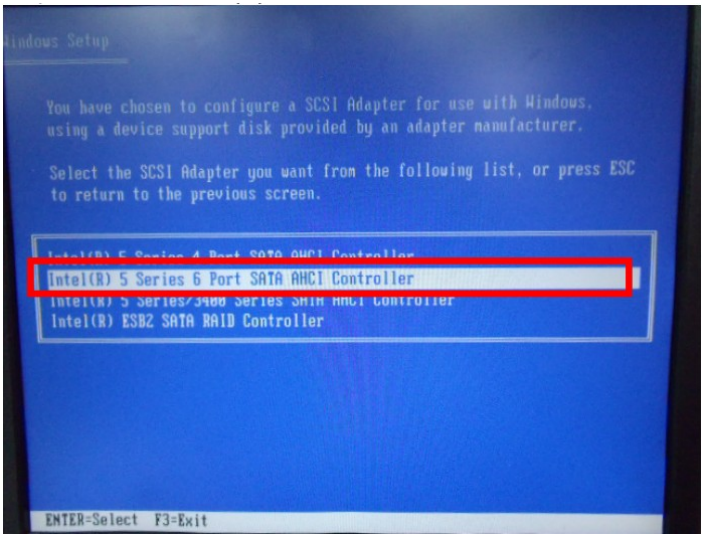


Step 6: Press "**F6**"

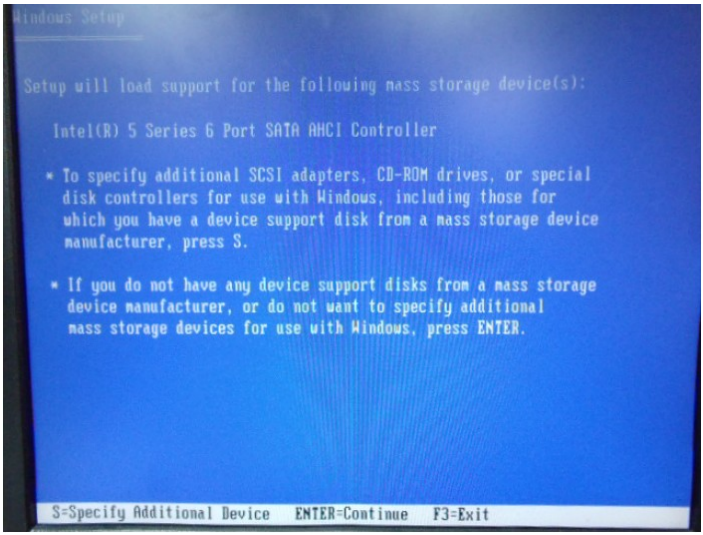
Step 7: Choose "**S**"



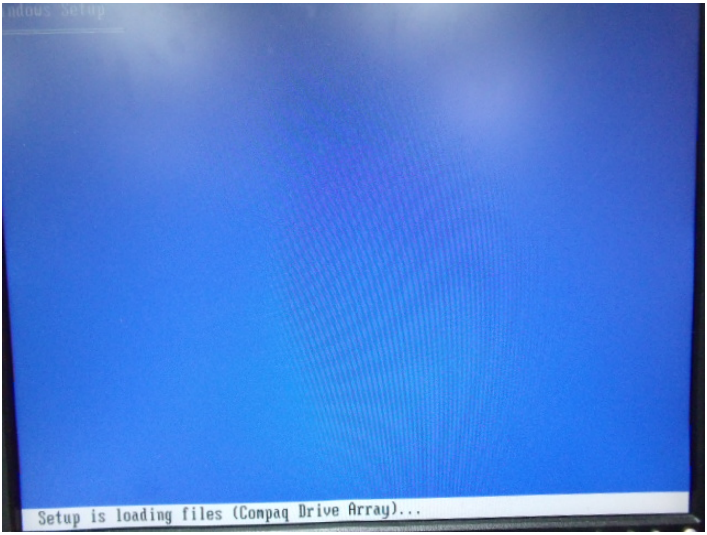
Step 8: Choose "**Intel(R) 7 Series Chipset Family SATA AHCI Controller**"



Step 9: It will show the model number you select and then press "**ENTER**"



Step 10: Setup is loading files



Appendix

A

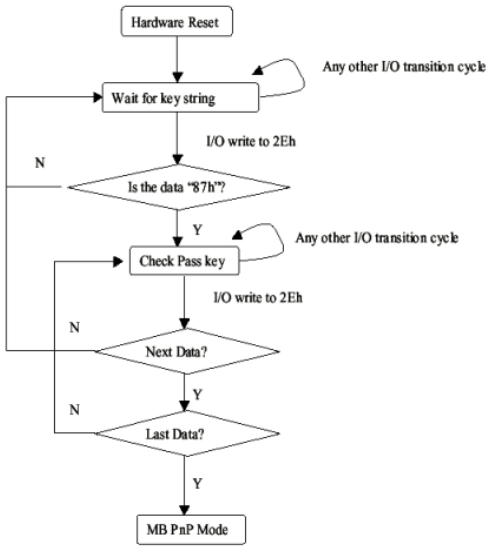
Programming the Watchdog Timer

A.1 Programming

ACP-5185 utilizes ITE 8781 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 programs to fit your application.

Configuring Sequence Description

After the hardware reset or power-on reset, the ITE 8781 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 opera-tions to the Special Address port (2EH). Two different enter keys are provided to select configuration ports (2Eh/2Fh) of the next step.

	Address Port	Data Port
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

LDN	Index	R/W	Reset	Configuration Register or Action
All	02h	W	NA	Configure Control

07h	71h	R/W	00h	Watch Dog Timer Control Register
07h	72h	R/W	001s0000b	Watch Dog Timer Configuration Register
07h	73h	R/W	38h	Watch Dog Timer Time-out Value (LSB) Register
07h	74h	R/W	00h	Watch Dog Timer Time-out Value (MSB) 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.

Watch Dog Timer 1, 2, 3 Control Register (Index=71h,81h,91h Default=00h)

Bit	Description
7	**WDT Timeout Enable(WTE)** 1: Disable. 0: Enable.
6	**WDT Reset upon Mouse Interrupt(WRKMI)** 0: Disable. 1: Enable.
5	**WDT Reset upon Keyboard Interrupt(WRKBI)** 0: Disable. 1: Enable.
4	**Reserved**
3-2	**Reserved**
1	**Force Time-out(FTO)** This bit is self-clearing.
0	**WDT Status(WS)** 1: WDT value reaches 0. 0: WDT value is not 0.

Watch Dog Timer 1, 2, 3 Configuration Register (Index=72h, 82h, 92h Default=001s0000b)

Bit	Description
7	**WDT Time-out Value Select 1 (WTVS)** 1: Second 0: Minute
6	**WDT Output through KRST (Pulse) Enable(WOKE)** 1: Enable 0: Disable
5	**WDT Time-out value Extra select(WTVES)** 1: 64ms x WDT Timer-out value (default = 4s) 0: Determined by WDT Time-out value select 1 (bit 7 of this register)
4	**WDT Output through PWROK (Pulse) Enable(WOPE)** 1: Enable 0: Disable During LRESET#, this bit is selected by JP7 power-on strapping option
3-0	**Select interrupt level [Note1] for WDT(SIL)**

Watch Dog Timer 1,2,3 Time-Out Value (LSB) Register (Index=73h,83h,93h, Default=38h)

Bit	Description
7-0	**WDT Time-out Value 7-0(WTV)**

Watch Dog Timer 1,2,3 Time-Out Value (MSB) Register (Index=74h,84h,94h Default=00h)

Bit	Description
7-0	**WDT Time-out Value 15-8(WTV)**

A.2 ITE8781 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,81h
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

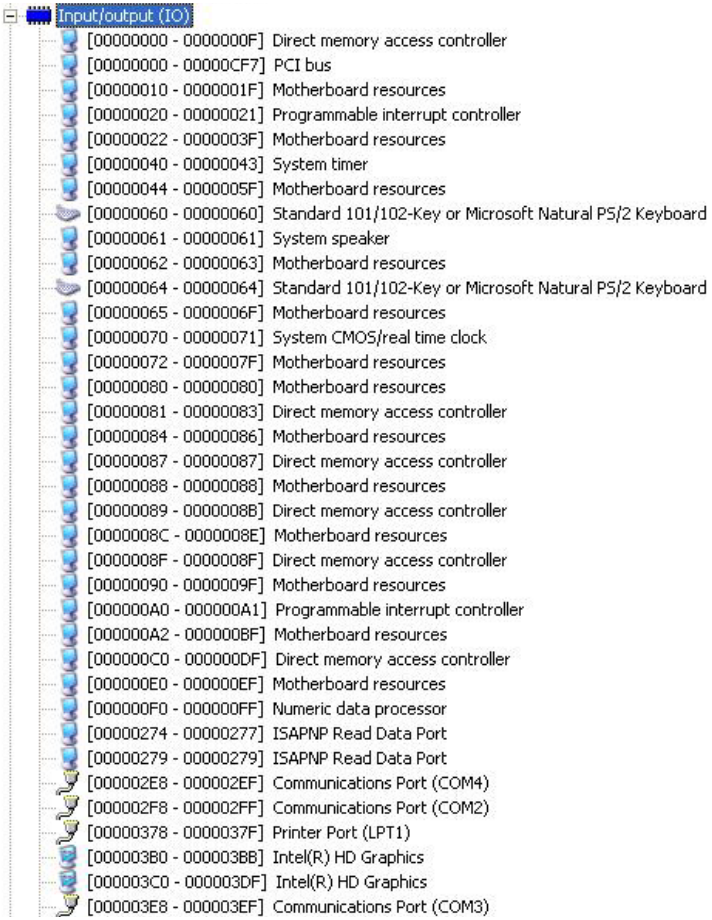
00h: no interrupt selected

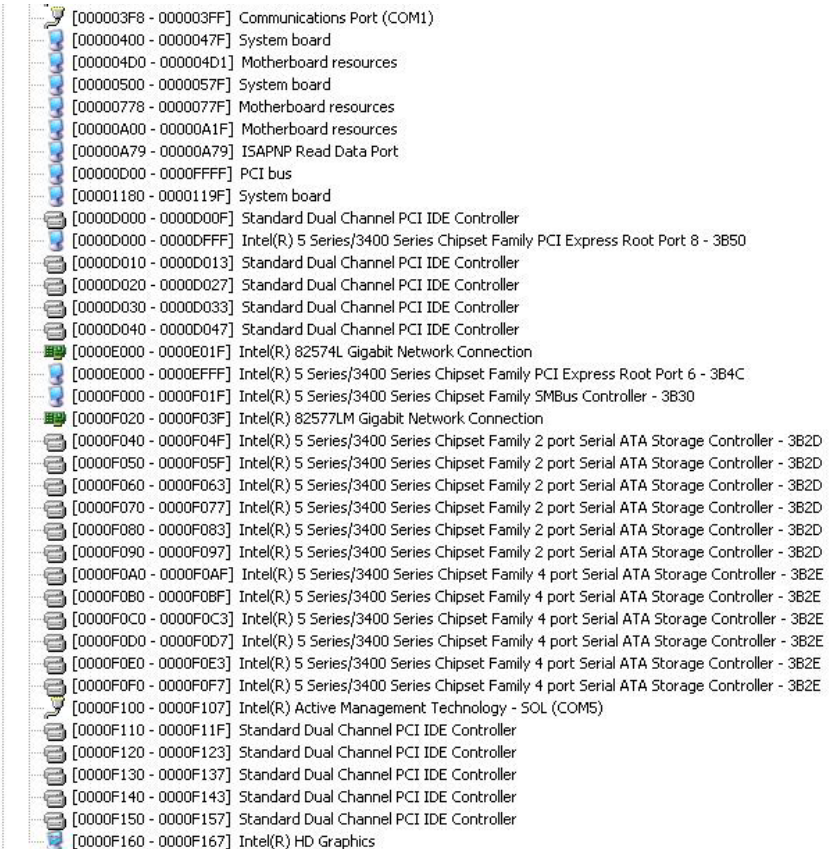
Appendix

B

I/O Information

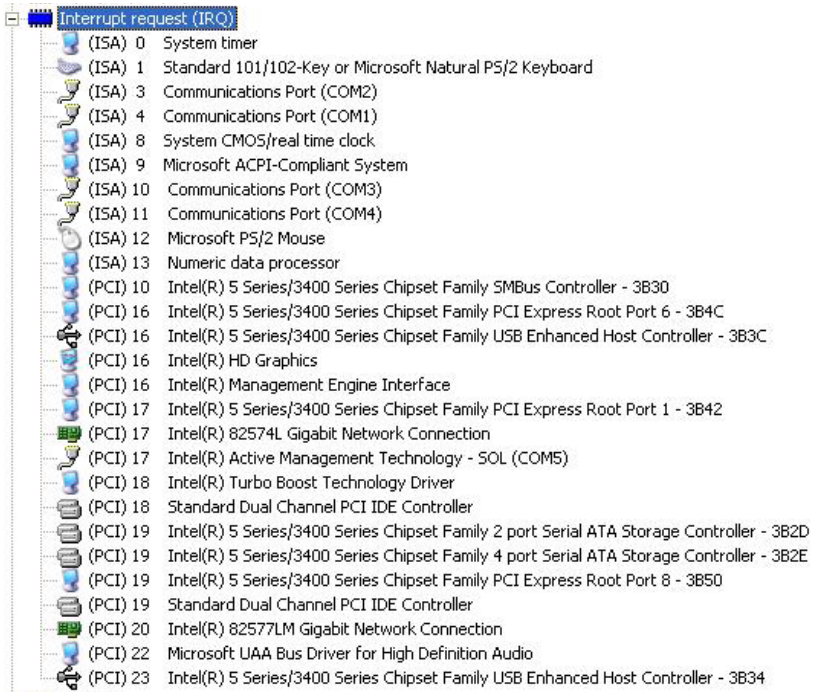
B.1 I/O Address Map



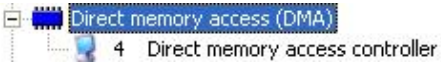

[000003F8 - 000003FF] Communications Port (COM1)
[00000400 - 0000047F] System board
[000004D0 - 000004D1] Motherboard resources
[00000500 - 0000057F] System board
[00000778 - 0000077F] Motherboard resources
[00000A00 - 00000A1F] Motherboard resources
[00000A79 - 00000A79] ISAPNP Read Data Port
[00000D00 - 0000FFFF] PCI bus
[00001180 - 0000119F] System board
[0000D000 - 0000D00F] Standard Dual Channel PCI IDE Controller
[0000D000 - 0000DFFF] Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 8 - 3B50
[0000D010 - 0000D013] Standard Dual Channel PCI IDE Controller
[0000D020 - 0000D027] Standard Dual Channel PCI IDE Controller
[0000D030 - 0000D033] Standard Dual Channel PCI IDE Controller
[0000D040 - 0000D047] Standard Dual Channel PCI IDE Controller
[0000E000 - 0000E01F] Intel(R) 82574L Gigabit Network Connection
[0000E000 - 0000EFFF] Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 6 - 3B4C
[0000F000 - 0000F01F] Intel(R) 5 Series/3400 Series Chipset Family SMBus Controller - 3B30
[0000F020 - 0000F03F] Intel(R) 82577LM Gigabit Network Connection
[0000F040 - 0000F04F] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[0000F050 - 0000F05F] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[0000F060 - 0000F063] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[0000F070 - 0000F077] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[0000F080 - 0000F083] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[0000F090 - 0000F097] Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
[0000F0A0 - 0000F0AF] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[0000F0B0 - 0000F0BF] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[0000F0C0 - 0000F0C3] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[0000F0D0 - 0000F0D7] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[0000F0E0 - 0000F0E3] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[0000F0F0 - 0000F0F7] Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
[0000F100 - 0000F107] Intel(R) Active Management Technology - SOL (COM5)
[0000F110 - 0000F11F] Standard Dual Channel PCI IDE Controller
[0000F120 - 0000F123] Standard Dual Channel PCI IDE Controller
[0000F130 - 0000F137] Standard Dual Channel PCI IDE Controller
[0000F140 - 0000F143] Standard Dual Channel PCI IDE Controller
[0000F150 - 0000F157] Standard Dual Channel PCI IDE Controller
[0000F160 - 0000F167] Intel(R) HD Graphics

B.2 1st MB Memory Address Map

B.3 IRQ Mapping Chart



B.4 DMA Channel Assignments



Appendix

C

Miscellanea

C.1 General Cleaning Tips

You may need the following precautions before you begin to clean the computer. When you clean any single part or component for the computer, please read and understand the details below fully.

1. Never spray or squirt the liquids directly onto any computer component. If you need to clean the device, please rub it with a piece of dry cloth.
2. Be cautious of the tiny removable components when you use a vacuum cleaner to absorb the dirt on the floor.
3. Turn the system off before you start to clean up the component or computer.
4. Never drop the components inside the computer or get circuit board damp or wet.
5. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
6. Try not to put any food, drinks or cigarettes around the computer.

C.2 Cleaning tools

Although many companies have created products to help improve the process of cleaning your computer and peripherals users can also use household items to clean their computers and peripherals. Below is a listing of items you may need or want to use while cleaning your computer or computer peripherals.

Keep in mind that some components in your computer may only be able to be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- **Cloth** - A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.
- **Water or rubbing alcohol** – You may moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer. Unknown solvents may be harmful to the plastics parts.
- **Vacuum cleaner** - Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.

- **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.
- **Foam swabs** - Whenever possible it is better to use lint free swabs such as foam swabs.

Note:
We strongly recommended that you should shut down the system before you start to clean any single components.

Please follow the steps below.

1. Close all application programs
2. Close operating software
3. Turn off power switch
4. Remove all device
5. Pull out power cable

C.3 Scrap Computer Recycling

If the computer equipments need the maintenance or are beyond repair, we strongly recommended that you should inform us as soon as possible for the suitable solution. For the computers that are no longer useful or work well, please contact with worldwide distributors for recycling.

The worldwide distributors show on the following website:

http://www.aaeon.com/?TabIndex=Contact&TabID=Distributors

Note:

Follow the national requirements to dispose unit

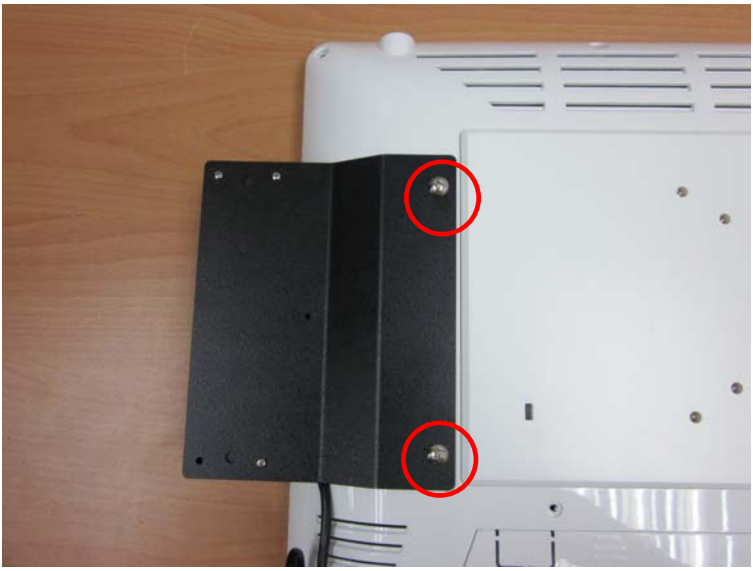
C.4 Installing Accessories

Skype Phone Installation

Step 1: Fasten the two screws(2-SELF TAPPING SCREWS) to fix the Skype Bracket with the ACP-5185

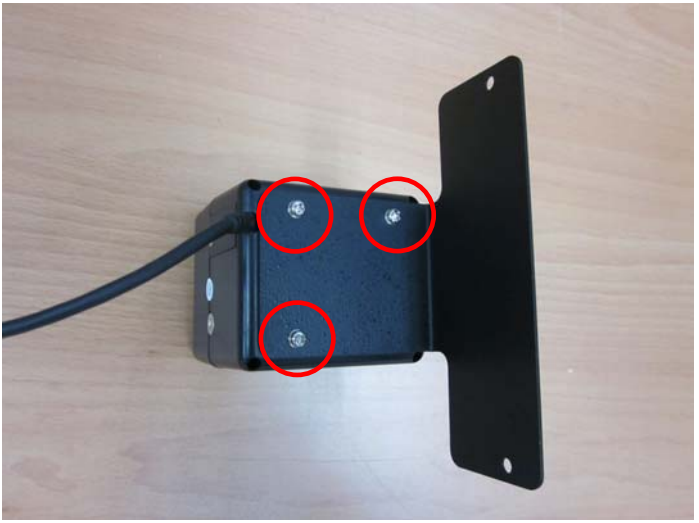
MSR Installation

Step 1: Fasten the two screws (2-SELF TAPPING SCREWS) to fix the MSR Bracket with the ACP-5185



Bar Code Scanner Installation

Step 1: Fasten the three screws to fix the Bar Code Scanner with the backet



Step 2: Fasten the two screws (2-SELF TAPPING SCREWS) to fix the Bar Code Scanner with the ACP-5185