AEC-6913

Fanless Embedded Controller
Intel® Atom™ D2550 1.86GHz Processor
2 PCI / PCI-E[x1]
2 GbE/ 8 COMs/
4 USB2.0, 2 USB3.0

AEC-6913 Manual 4th Ed.
August 5, 2015

Copyright Notice

Acknowledgments

- AMI is a trademark of American Megatrends Inc.
- CFast™ is a trademark of the Compact Flash Association.
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- PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.

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Packing List

Before you begin operating your PC, please make sure that the following materials have been shipped:

- 1 AEC-6913 Embedded Controller
- 1 Phoenix Power Connector
- 4 M3 x 4mm Screws
- 6 M4 x 8mm Screws
- 2 Wallmount Brackets
- 1 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 70°C (158°F). IT MAY DAMAGE THE 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.

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.

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

AAEON Boxer/ Industrial System

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚(PBDE)
印刷电路板及其电子组件	×	○	○	○	○	○
外部信号连接器及线材	×	○	○	○	○	○
外壳	×	○	○	○	○	○
中央处理器与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
电源	×	○	○	○	○	○

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、电源为选购品。

Contents

Chapter

1

General Information

1.1 Introduction

Due to the growing popularity from the IPC market, the newest Boxer series AEC-6913 has been introduced by AAEON. Being a control center, the AEC-6913 is suitable for Machine Control, Data Processing, Fleet Management, Data Management. AEC-6913 equips a high efficiency heat conduction mechanism.

The AEC-6913 is compact in size but has attractive and flexible extension capabilities such as 4 USB 2.0 ports and 2 USB 3.0 ports, VGA, Audio, 8 COM ports, and 2 PCI or PCI-E[x1].

Stable Design for Rugged Environment

The AEC-6913 is designed for rugged environments due to the following reasons; first, it can withstand tough vibration testing up to 3 g rms. With the anti-vibration hard drive device option, the AEC-6913 can be used in high vibration environments. In addition, the AEC-6913 offers low power consumption system that while operating in ambient temperatures ranging from -20° to 65°C with Intel® Atom™ D2550 processor.

The AEC-6913 is a standalone high performance controller designed for long-life operation and with high reliability. It can replace traditional methods and become the mainstream controller for the multimedia entertainment market.

1.2 Features

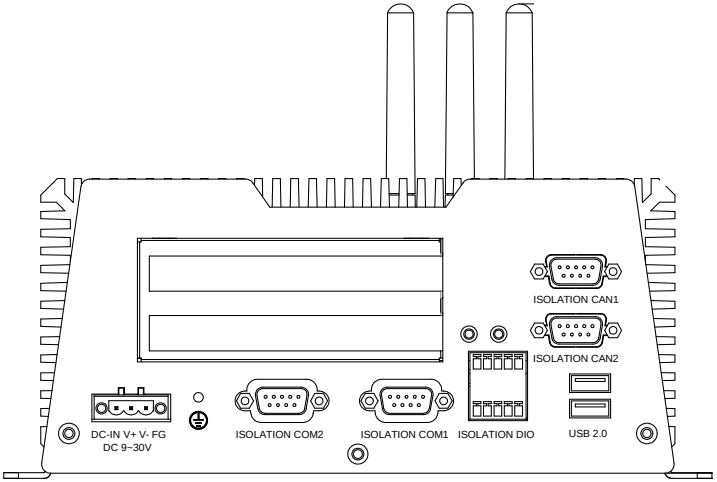
- Fanless Design
- Intel® Atom™ D2550 Processor
- Intel® NM10 Chipset
- Gigabit Ethernet, RJ-45 x 2
- DVI-I x 1
- SATA 3.0 Gb/s x 1, CFast™ Slot x 1
- USB 2.0 x 4, USB 3.0 x 2, COM x 8 (3 KV Isolation x 2), 3KV Isolated DIO x 1 (4 in, 4 out)
- 2.5” SATA HDD Bay x 1, CFast™ Slot x 1
- PCI x 2 or PCI-E[x1] x 1 via Riser Card

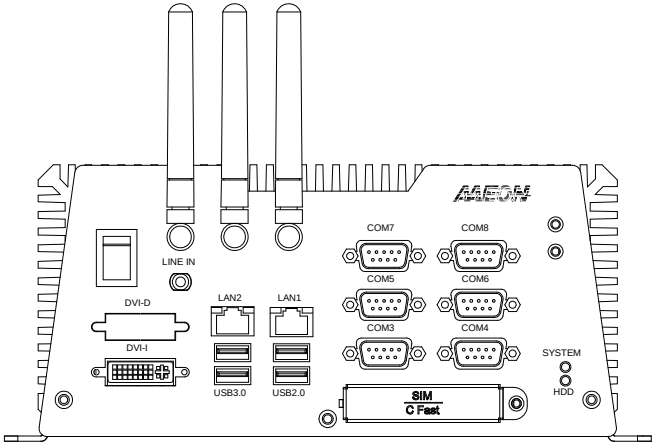
1.3 Specifications

● CPU		Intel® Atom™ D2550 Processor, 1.86 GHz
● Chipset		Intel® NM10
● System Memory		DDR3 SODIMM x 1, Max. 4 GB, support DDR3 800/1066
● Display Interface	VGA	—
	DVI	DVI-I x 1
	HDMI	—
	Others	—
● Storage Device	SSD	CFast™ slot
	HDD	2.5" SATA HDD Bay x 1
	Others	—
● Network	LAN	Gigabit Ethernet
	Wireless	Optional by Mini Card
● Front I/O	USB Host	USB3.0 x 2, USB2.0 x 2
	LAN	RJ-45 x 2
	Serial Port	RS-232 x 4, RS-232/422/485 x 2
	DIO	—
	Audio	Line-out
	KB/MS	—
	Others	DVI-I x 1, Antenna hole x 3, Power switch, LED x 2, CFast slot x 1, SIM slot x 1

● Rear I/O	USB Host	USB 2.0 x 2
	LAN	—
	Serial Port	Insolated RS-232/422/485 x 2 (3KV, jumper selection)
	DIO	Isolated DIO x 1 (4 in and 4 out, 3KV)
	Audio	—
	KB/MS	—
	Others	3-pin terminal power input x 1, grounding screw x 1, PCI x 2 or PCI-E[x1], isolated CANBus x 2 (optional, 3KV)
● Expansion	PCI-E[x1]	PCI-E[x1] via Riser Cad
	PCI	2 via Riser Cad
	Mini Card	2
	Mini PCI	—
	Others	—
● Indicator	Front	—
	Rear	System LED x 1, HDD LED x 1
● Power Requirement		DC-in 9~30V input, optional AC 110V~240V
● System Cooling		Passive cooling
● Mounting		Wallmount
● Operating Temperature		-4°F ~ 149°F (-20°C ~ 65°C) (30W TDP CPU) (Without Airflow, with wide

		temperature Storage and RAM)
● Storage Temperature		-4°F ~ 158°F (-20°C ~ 70°C)
● Anti-Vibration		3 g rms/ 5~500 Hz/ operation-CFast™; 1 g rms/ 5~500 Hz/ operation-HDD
● Anti-Shock		50 G peak acceleration (11 msec. duration) –CFast™ 20 G peak acceleration (11 msec. duration) –HDD
● Certification	EMC	CE/FCC Class A
	Safety	—
● Dimension (W x H x D)		9.52" x 8.43" x 3.95" (241.8mm x 214mm x 100.2mm)
● Gross Weight		15.29 lb (6.95 Kg)
● Net Weight		11 lb (5 Kg)
● OS Support		Windows® XP Embedded, Windows® XP, Windows® 7, Linux Fedora 10


ISOLATION CAN1
ISOLATION CAN2
DC-IN V+ V- FG
DC 9~30V
ISOLATION COM2
ISOLATION COM1
ISOLATION DIO
USB 2.0

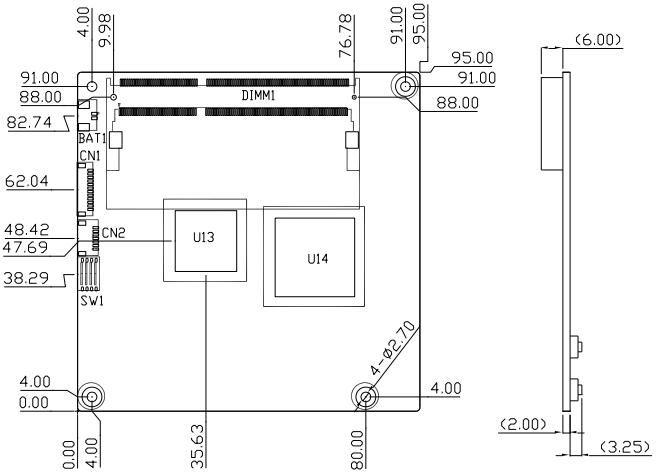

COM7
COM8
LINE IN
COM5
COM6
DVI-D
LAN2
LAN1
COM3
COM4
DVI-I
SYSTEM
HDD
USB3.0
USB2.0
SIM
C Fast

Chapter

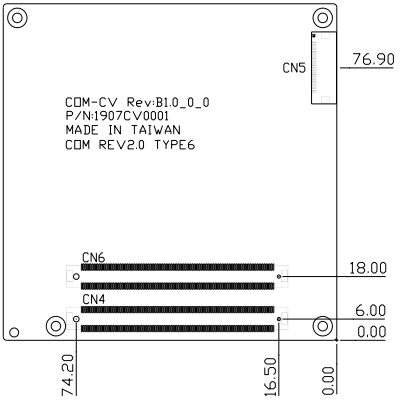
2

Hardware Installation

2.1 Jumpers and Connectors of Main Board

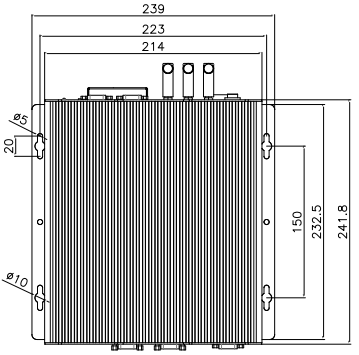


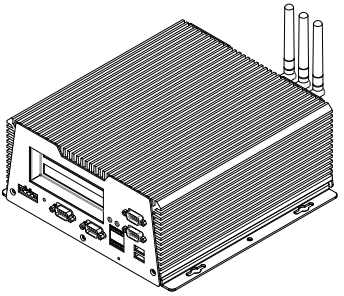
Component Side

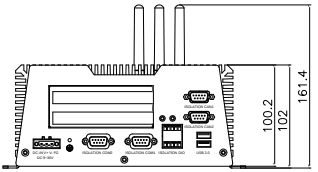


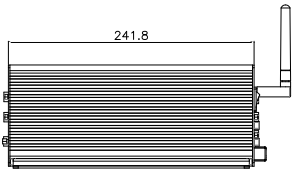
Solder Side

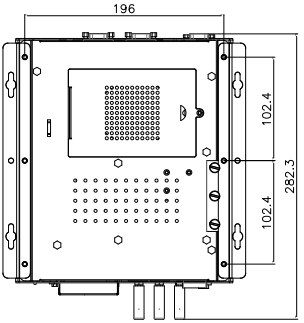
2.2 Dimension











2.3 List of Jumpers

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

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

Label	Function
JP1	PEG Enable
JP3	RS-232/422/485 Selection (COM1)
JP4	RS-232/422/485 Selection (COM2)
JP5	LVDS Port Backlight Lightness Control Mode Selection
JP8	LVDS Inverter Voltage Selection
JP9	LVDS Voltage Selection
JP13	Clear CMOS
JP16	RS-232/422/485 Selection (COM8)
JP17	RS-232/422/485 Selection (COM7)
J1	AT/ATX Mode Selection

2.4 List of Connectors

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

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

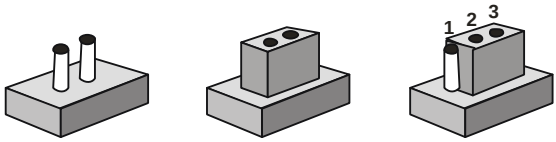
Label	Function
CN1	COM_DIO
CN3	COM SLOT
CN4	DVI-I connector
CN5	Mini Card Connector With external SIM

CN6	Mini Card Connector With onboard SIM
CN9	CFast™ Connector(SATA 3.0)
CN10,CN11	SATA Power
CN12	USB2.0 X2 / LAN1 Connector
CN13	USB3.0 X2 / LAN2 Connector
CN17	LVDS Connector
CN18	LPC Debug port
CN19	Isolated COM1 Connector
CN26	Isolated COM2 Connector
CN20	COM3 RS-232 1x9 Header
CN21	COM4 RS-232 1x9 Header
CN22	COM6 RS-232 1x9 Header
CN23	COM5 RS-232 1x9 Header
CN24	COM7 RS-232/422/485 1x9 Header
CN25	COM8 RS-232/422/485 1x9 Header
CN28	DC IN
CN29	Digital I/O
CN30	USB2.0 x 2 Connector
CN32	LVDS Inverter / Backlight Connector
CN33	4-pin ATX12V Power Connector
CN38	Front Panel Connector
SATA1	SATA2.0 Connector
FAN1	4-Pin Fan Connector
CN39	AUDIO Connector
CN27	Keyboard/Mouse header

2.5 Setting Jumpers

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

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



Open **Closed** **Closed 2-3**

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

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

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

2.6 Isolated COM1, COM2 RS-232/485/422 Selection (JP3, JP4)

JP3,JP4	Function
RS-232	1-2,3-4,5-6 close
RS-422	3-4 close , 1-2 5-6 open
RS-485	5-6 close , 1-2 3-4 open

2.7 LVDS Port Backlight Lightness Control Mode Selection (JP5)

JP5	Function
1-2	PWM MODE
2-3	VR MODE (Default)

2.8 LVDS Inverter Voltage Selection (JP8)

JP8	Function
1-2	+12V (Default)
2-3	+5V

2.9 LVDS Voltage Selection (JP9)

JP9	Function
1-2	5V
2-3	3.3V(Default)

2.10 Clear CMOS (JP13)

JP13	Function
1-2	Normal (Default)
2-3	Clear CMOS

2.11 Auto Power Button (J1)

J1	Function
OPEN	ATX (Default)

1-2	AT

2.12 SATA Power (CN10~CN11)

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

2.13 LVDS Connector (CN17)

Pin	Signal	Pin	Signal
1	BKL_EN	2	BKL_CTL
3	LVDSVCC	4	GND
5	LVDSA_CLK#	6	LVDSA_CLK
7	LVDSVCC	8	GND
9	LVDSA_DATA0#	10	LVDSA_DATA0
11	LVDSA_DATA1#	12	LVDSA_DATA1
13	LVDSA_DATA2#	14	LVDSA_DATA2
15	LVDSA_DATA3#	16	LVDSA_DATA3
17	LVDS_DDC_DATA	18	LVDS_DDC_CLK
19	LVDSB_DATA0#	20	LVDSB_DATA0
21	LVDSB_DATA1#	22	LVDSB_DATA1
23	LVDSB_DATA2#	24	LVDSB_DATA2
25	LVDSB_DATA3#	26	LVDSB_DATA3
27	LVDSVCC	28	GND
29	LVDSB_CLK#	30	LVDSB_CLK

2.14 ISO DIO (CN29)

Pin	signal	Pin	signal
1	IDO1	2	IDI1

3	IDO2	4	IDI2
5	IDO3	6	IDI3
7	IDO4	8	IDI4
9	VISO	10	GND

2.15 LVDS Inverter/ Backlight Connector (CN32)

Pin	Signal	Pin	Signal
1	VDD	2	BKL_CTL
3	GND	4	GND
5	BKL_EN		

2.16 Front Panel Connector (CN38)

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

2.17 RS-232/422/485 Pin Definition (COM1)

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

2.18 RS-232/422/485 Pin Definition (COM2)

Pin	Signal	Pin	Signal
1	DCD	2	RXD

3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

2.19 RS-232 Header (COM3)

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

2.20 RS-232 Header (COM4)

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

2.21 RS-232 Header (COM5)

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

2.22 RS-232 Header (COM6)

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

2.23 RS-232/422/485 Pin Definition (COM7)

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

2.24 RS-232/422/485 Pin Definition (COM8)

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

RS-422 mode

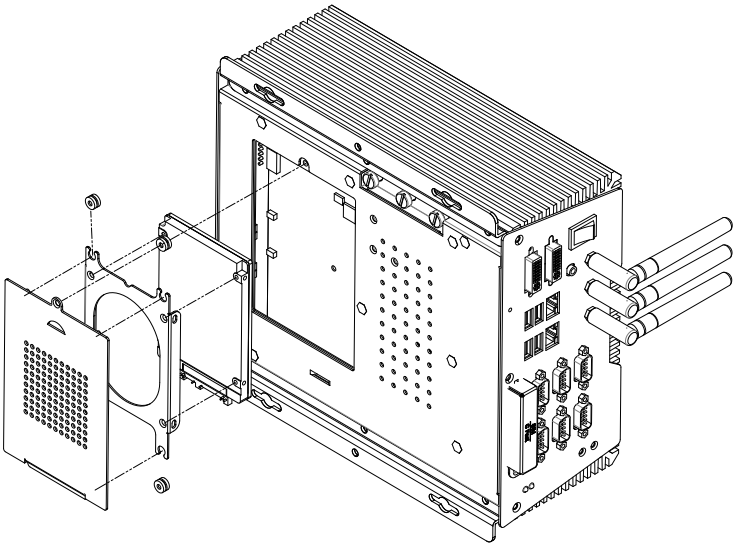
Pin	Signal	Pin	Signal
1	TXD-	2	RXD+
3	TXD+	4	RXD-
5	GND	6	NC

7	NC	8	NC
9	NC		

RS-485 mode

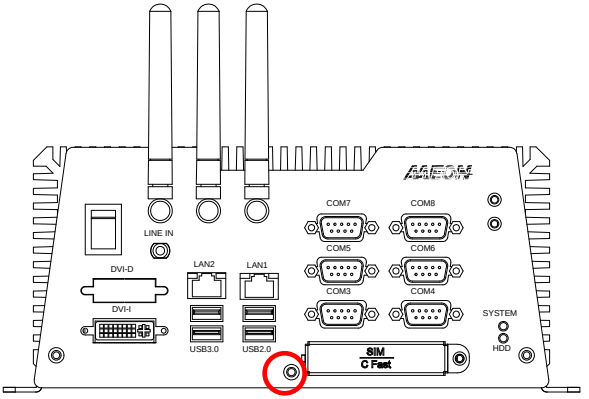
Pin	Signal	Pin	Signal
1	D-	2	NC
3	D+	4	NC
5	GND	6	NC
7	NC	8	NC
9	NC		

2.25 Hard Disk Drive Installation

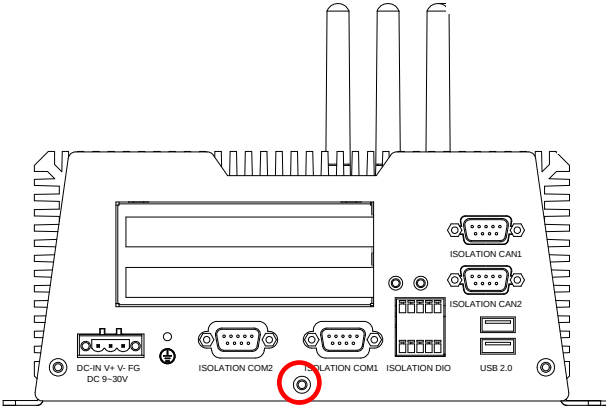


2.26 PCI Card Installation

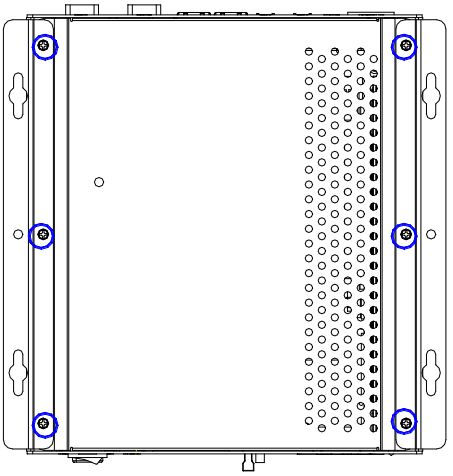
Step 1: Unfasten the screw on the rear panel.



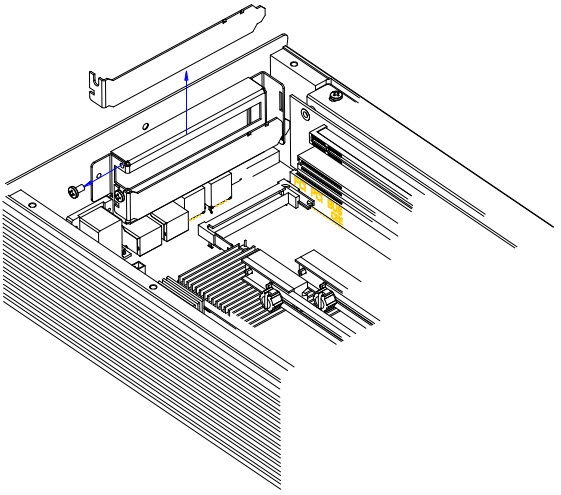
Step 2: Unfasten the screw on the front panel.



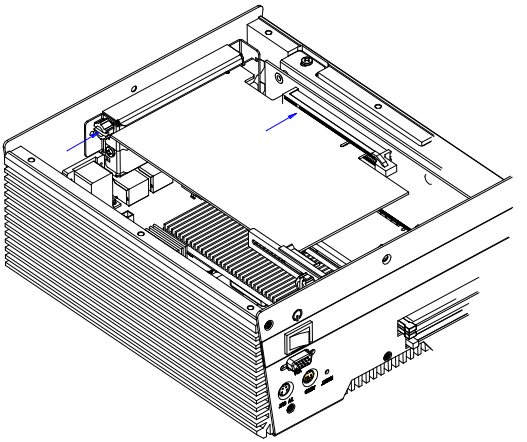
Step 3: Unfasten the six screws on the bottom lid.



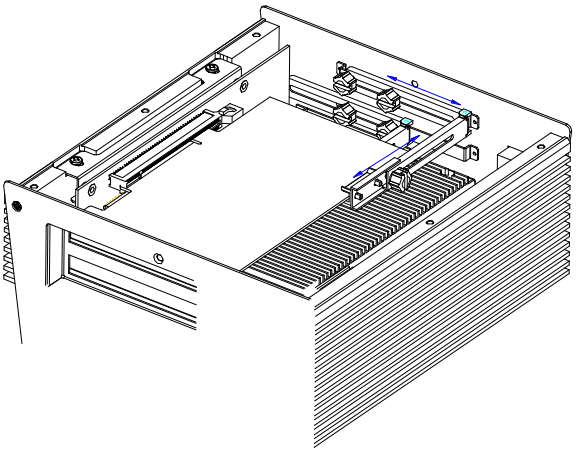
Step 4: Remove the screw with your finger and get the PCI card ready to install. You should keep the shield and screw for use later.



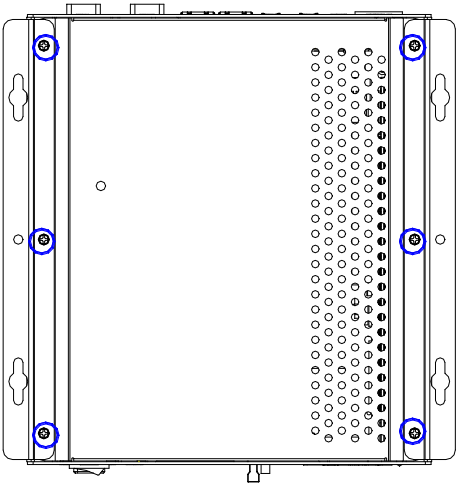
Step 5: Insert the PCI card into the PCI slot and reattach the screw.



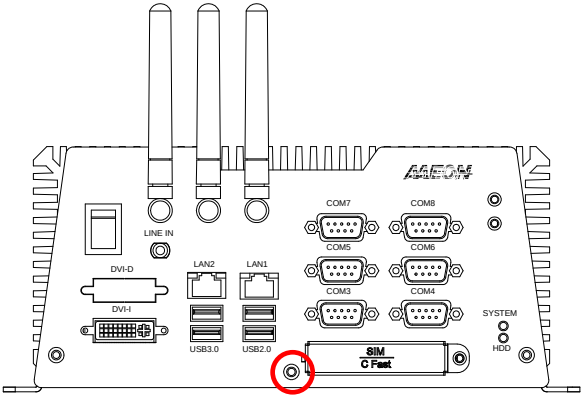
Step 6: Unfasten the screws and push the tenon to lock the PCI card in position.

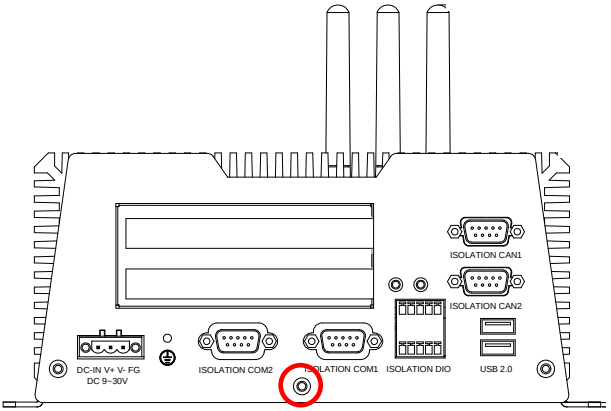


Step 7: Close the bottom lid of the AEC-6913 and fasten six screws on bottom lid.



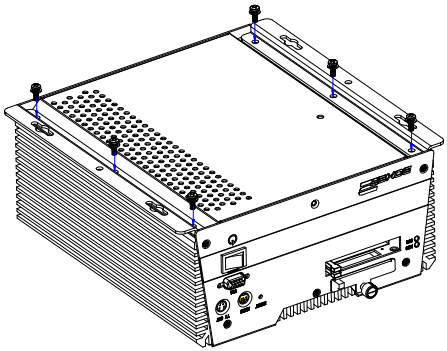
Step 8: Fasten the one screw on the front panel and one screw on the rear panel

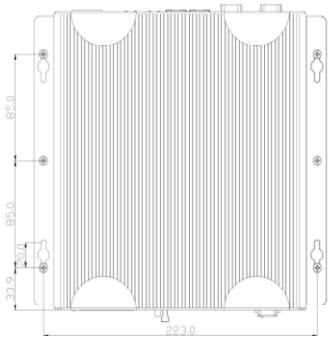


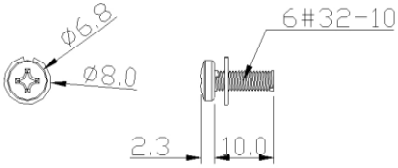

ISOLATION CAN1
ISOLATION CAN2
DC-IN V+ V- FG
DC 9~30V
ISOLATION COM2
ISOLATION COM1
ISOLATION DIO
USB 2.0

2.27 Wallmount kit Installation

Step 1: Get the brackets ready and fasten appropriate three screws on each bracket. After fastening the two brackets on the bottom lid of AEC-6913, the wallmount kit installation is finished







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-6913 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

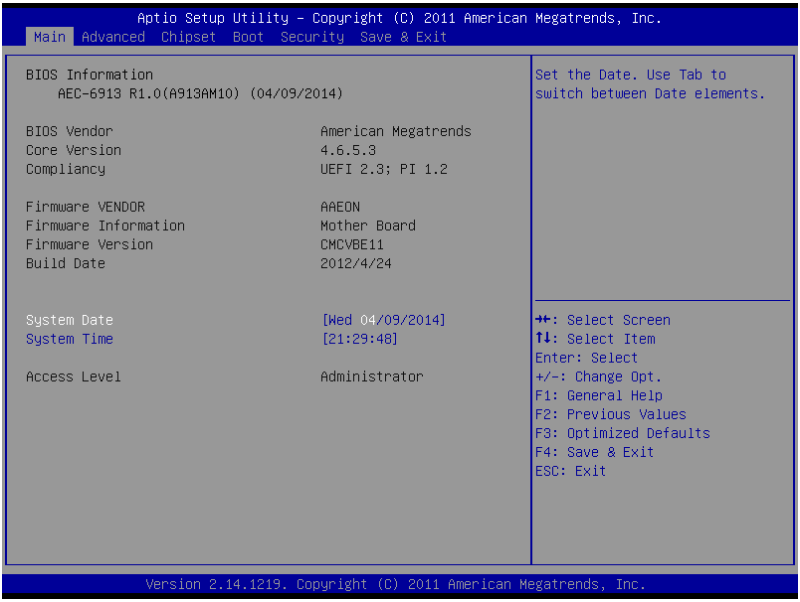
Set setup administrator password.

Save & Exit

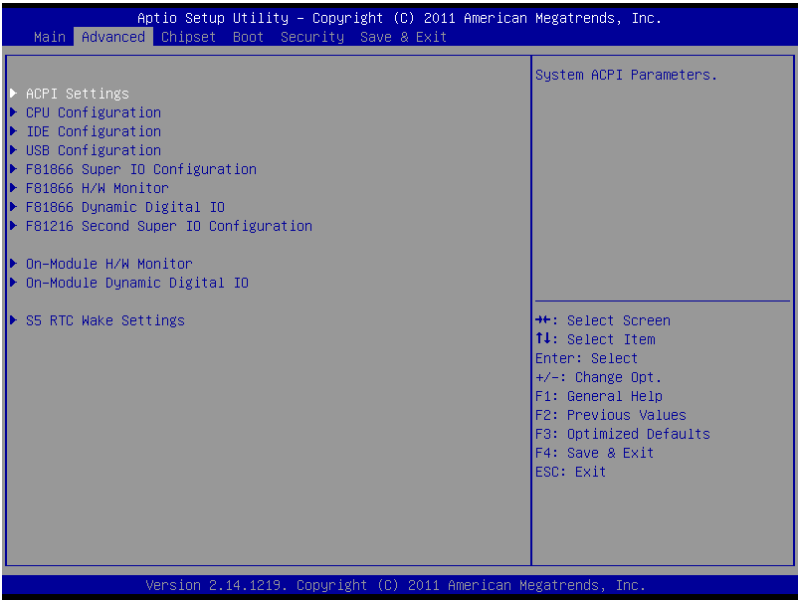
Exit system setup after saving the changes.

Setup Menu

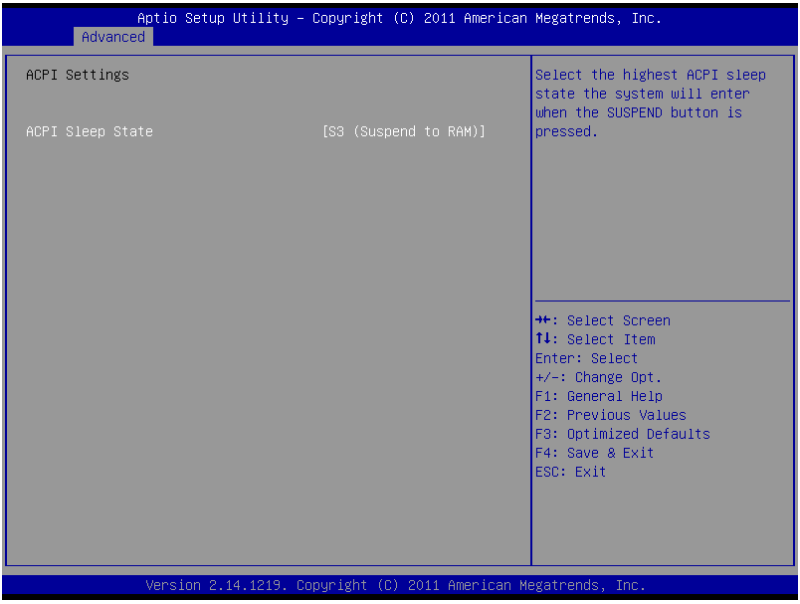
Setup submenu: Main



Setup submenu: Advanced



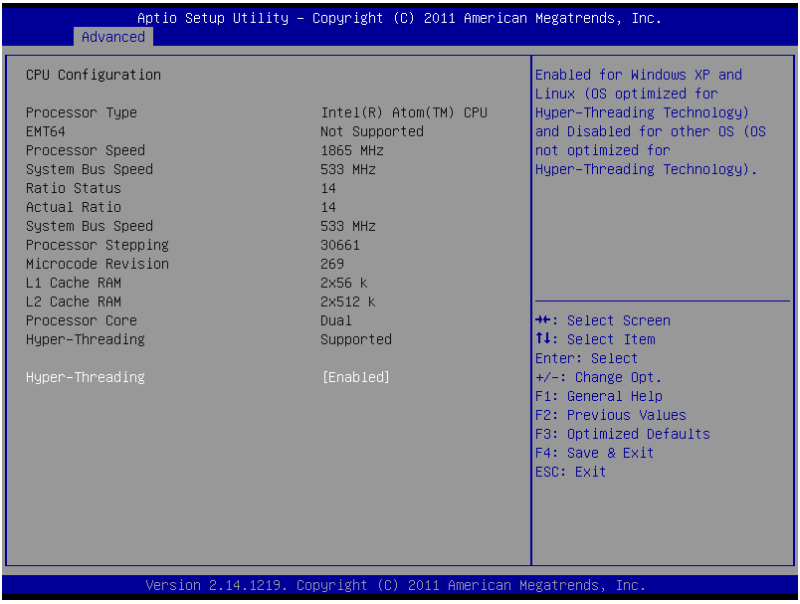
ACPI Settings



Options summary:

Suspend mode	Suspend Disabled	Optimal Default, Failsafe Default
	S3 only (Suspend to RAM)	
Select the ACPI state used for System Suspend		

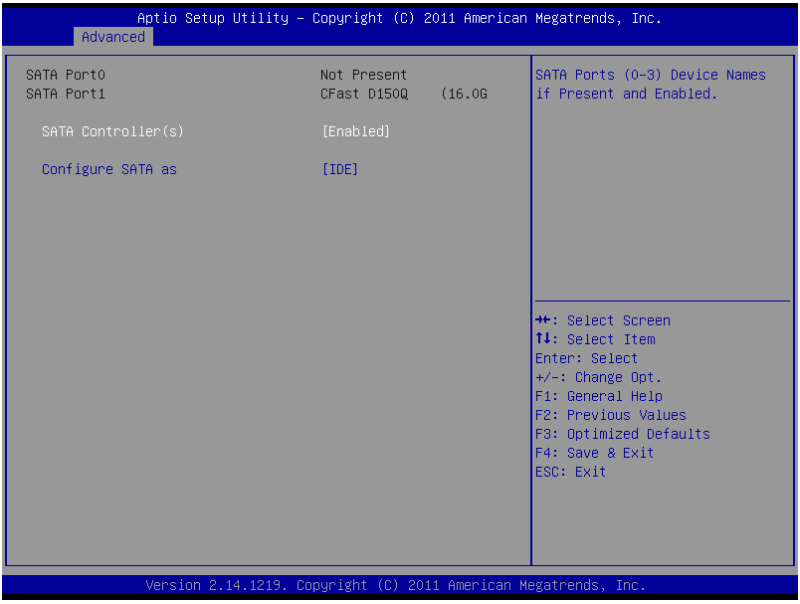
CPU Configuration



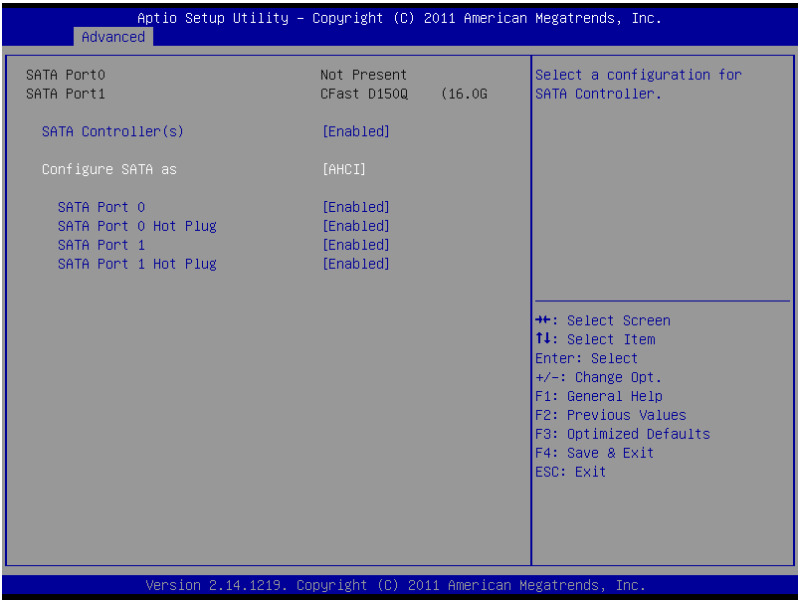
Options summary:

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).		

IDE Configuration (IDE)



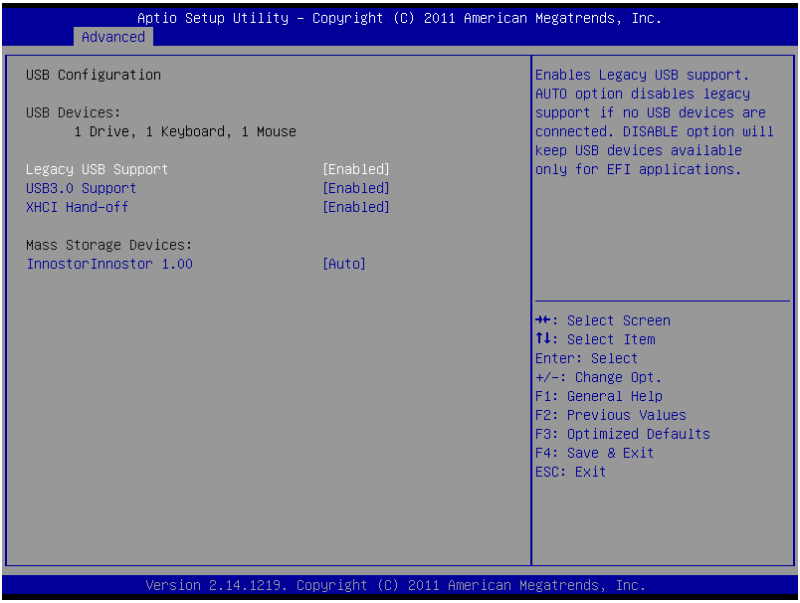
IDE Configuration (AHCI)



Options summary:

SATA Controllers	Disabled	Default
	Enabled	
En/Disable SATA Controller.		
SATA Mode	IDE	Default
	AHCI	
IDE: Configure SATA controllers as legacy IDEAHCI: Configure SATA controllers to operate in AHCI mode		
Port x	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable SATA Port.		
Hot Plug	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable Hot Plug feature.		

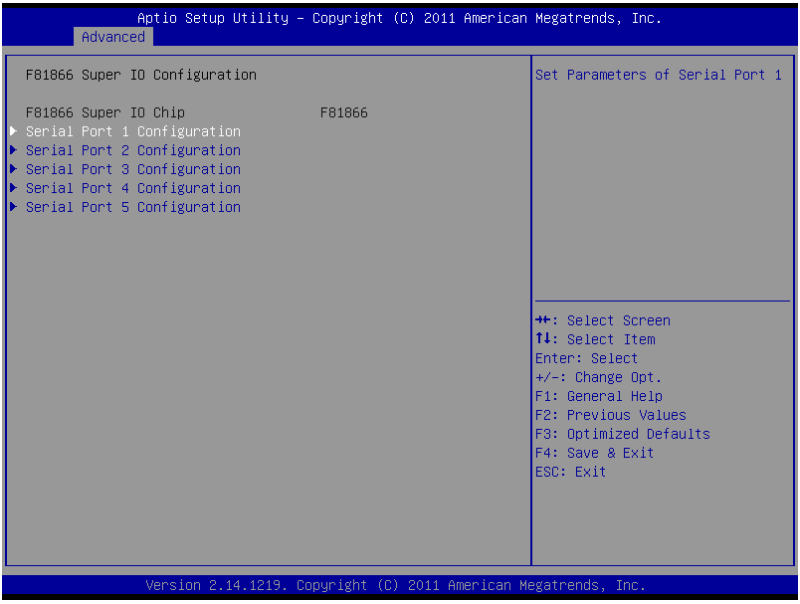
USB Configuration



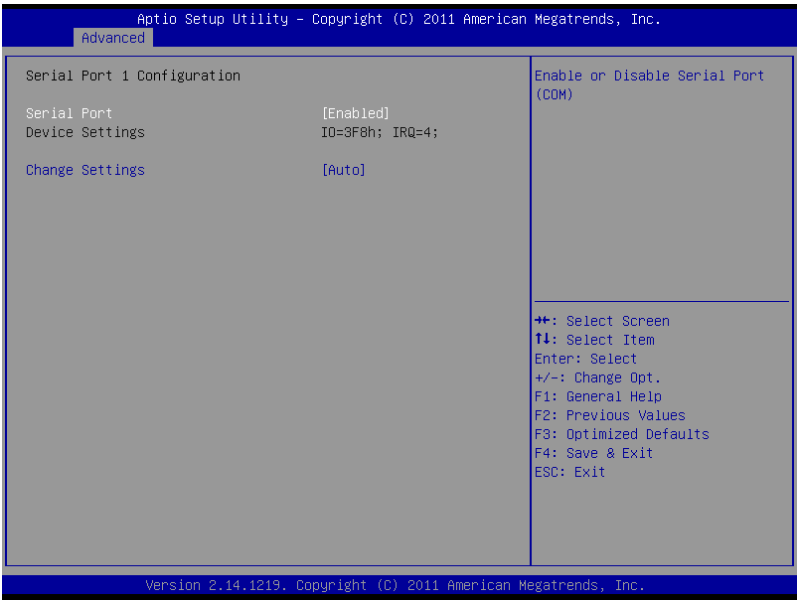
Options summary:

Legacy USB Support	Enabled	Optimal Default, Failsafe Default
	Disabled	
	Auto	
Enables BIOS Support for Legacy USB Support. When enabled, USB can be functional in legacy environment like DOS. AUTO option disables legacy support if no USB devices are connected		
USB3.0 Support	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable/Disable USB3.0 (XHCI) Controller support.		
XHCI Hand-off	Enabled	Optimal Default, Failsafe Default
	Disabled	
This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.		

F81866 Super IO Configuration



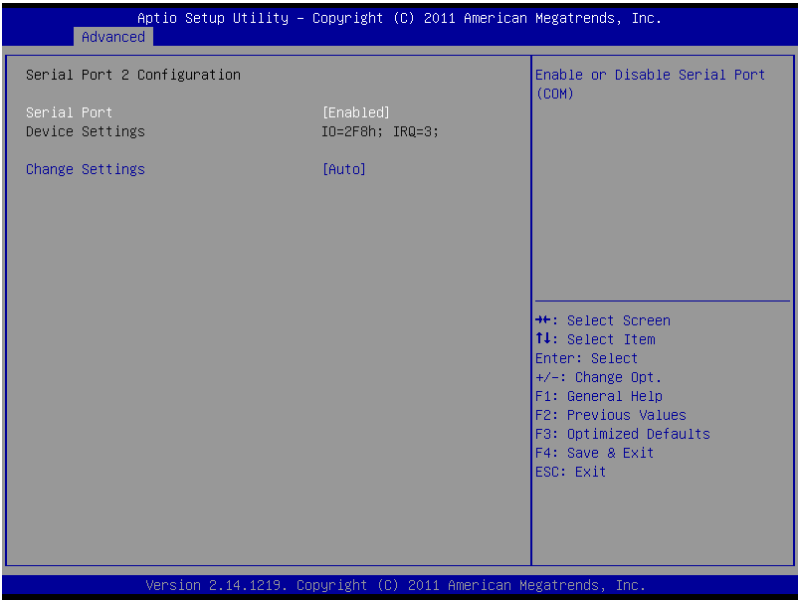
Serial Port 1 Configuration



Options summary:

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disable correspond serial port.		
Change Settings	Auto	Default
	IO=3F8h; IRQ=4;	
	IO=2F8h; IRQ=3	
Allows BIOS to Select Serial Port resource.		

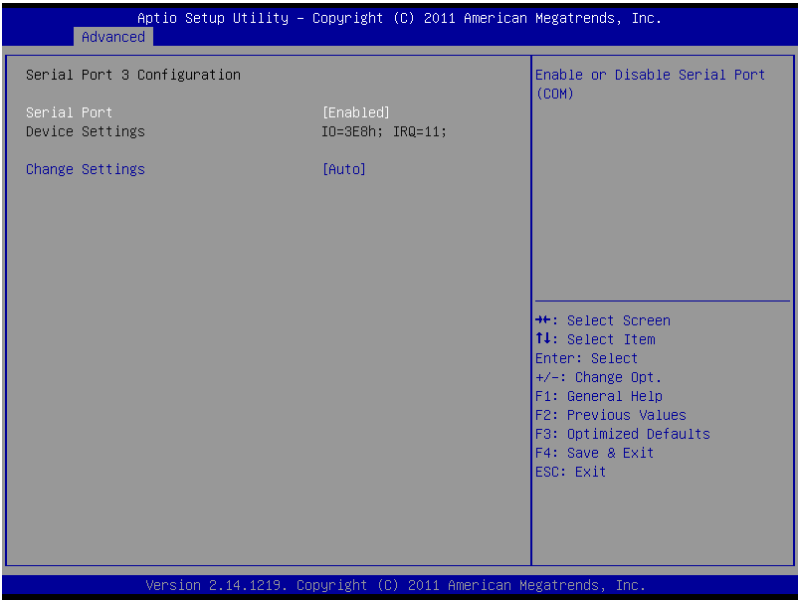
Serial Port 2 Configuration



Options summary:

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disable correspond serial port.		
Change Settings	Auto	Default
	IO=2F8h; IRQ=3;	
	IO=3F8h; IRQ=4;	
Allows BIOS to Select Serial Port resource.		

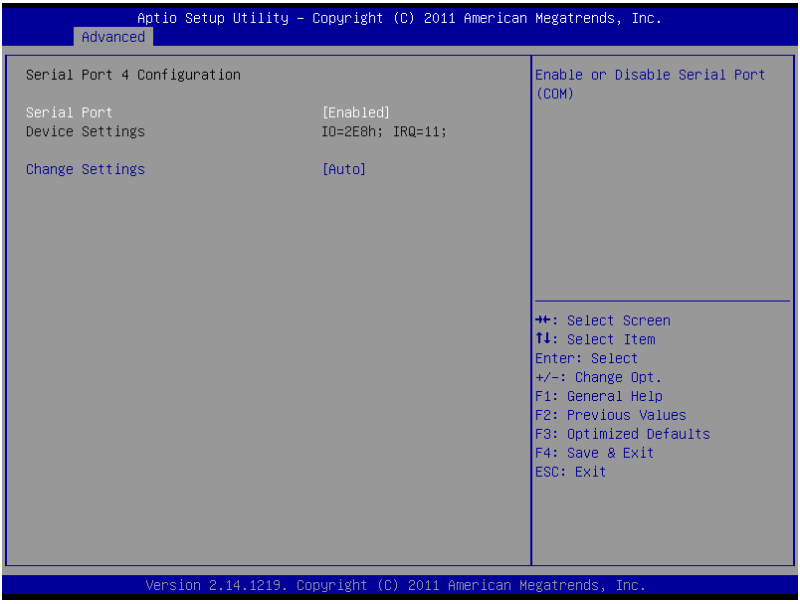
Serial Port 3 Configuration



Options summary:

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disable correspond serial port.		
Change Settings	Auto	Default
	IO=3E8h; IRQ=11;	
	IO=2E8h; IRQ=11;	
Allows BIOS to Select Serial Port resource.		

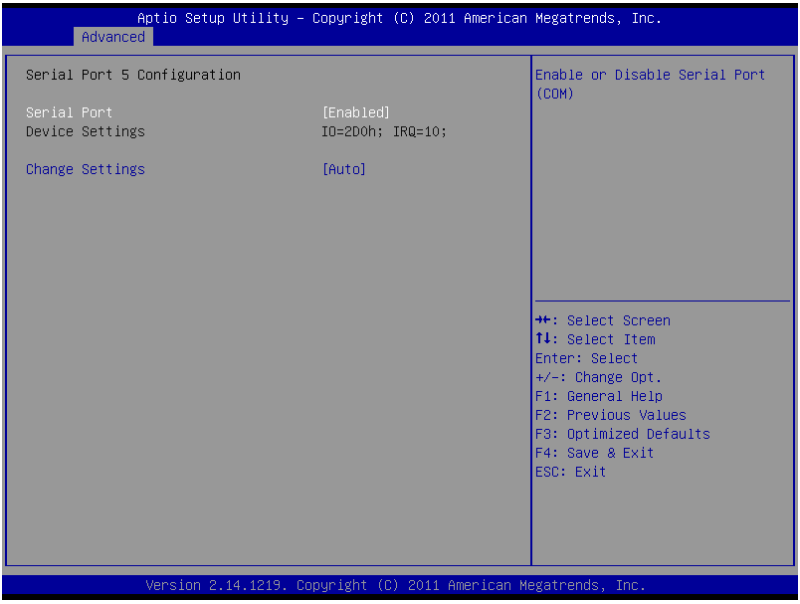
Serial Port 4 Configuration



Options summary:

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disable correspond serial port.		
Change Settings	Auto	Default
	IO=3E8h; IRQ=11;	
	IO=2E8h; IRQ=11;	
Allows BIOS to Select Serial Port resource.		

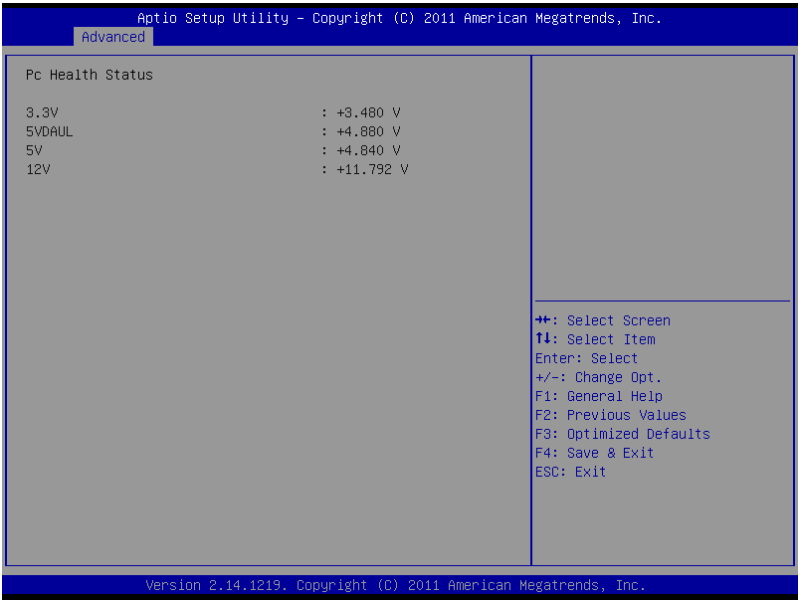
Serial Port 5 Configuration



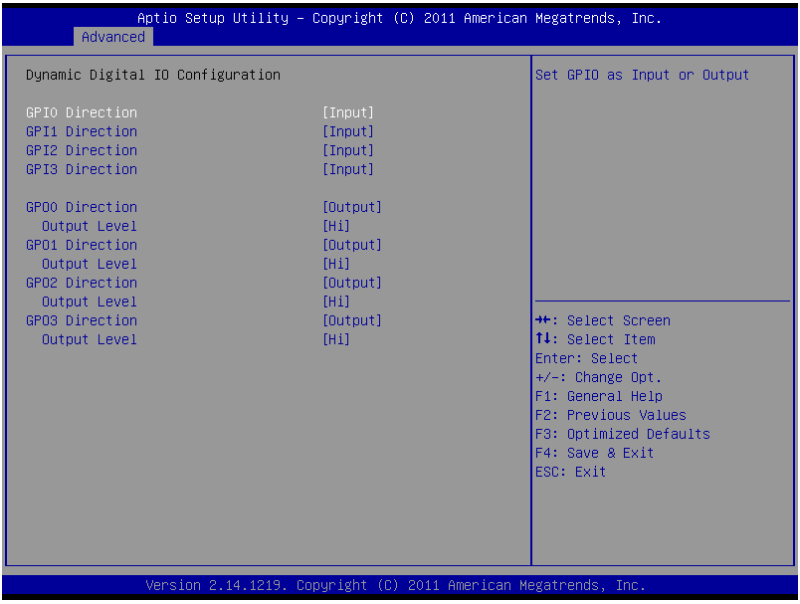
Options summary:

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disable correspond serial port.		
Change Settings	Auto	Default
	IO=2D0h; IRQ=10;	
	IO=2C0h; IRQ=10;	
Allows BIOS to Select Serial Port resource.		

F81866 H/W Monitor



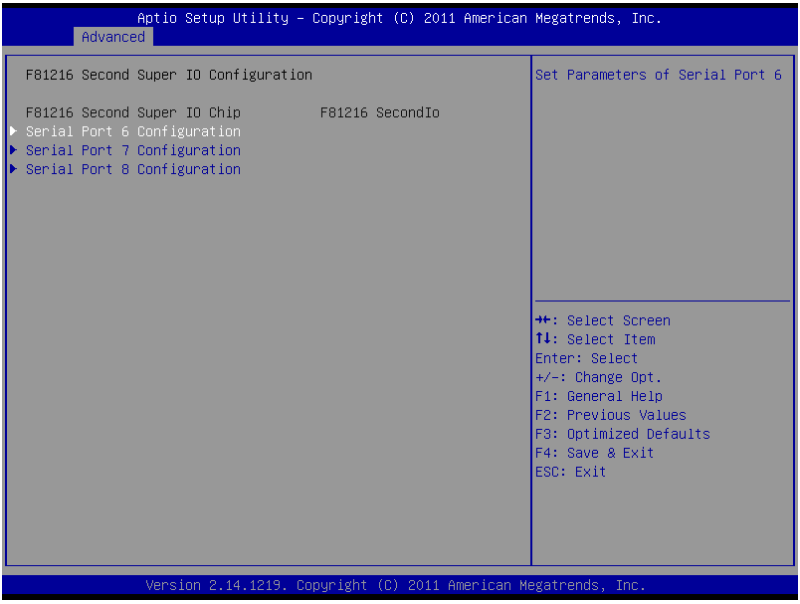
F81866 Dynamic Digital IO



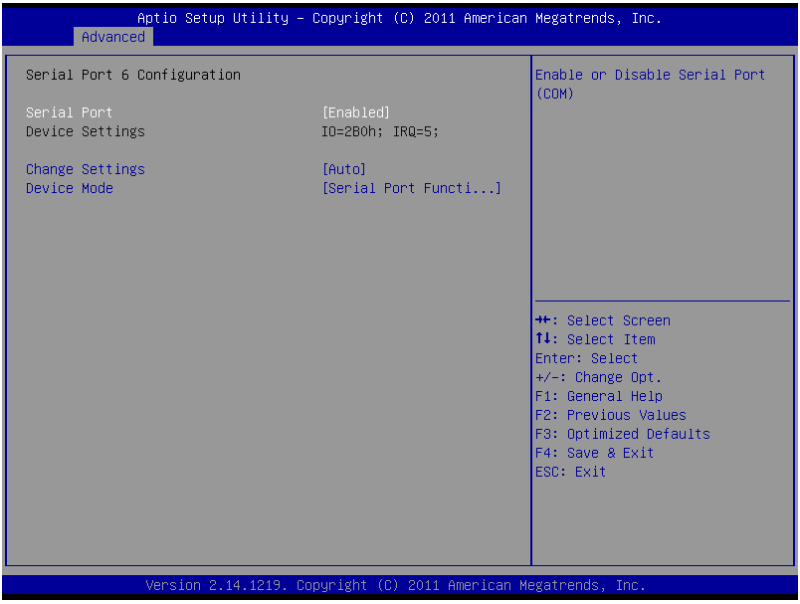
Options summary:

GPI0~3 Direction	Input	Default
	Output	
Set GPIO as Input or Output.		
GPO0~3 Direction	Input	
	Output	Default
Set GPIO as Input or Output.		
Output Level	Low	
	Hi	Default
Allows BIOS to select high/low voltage level to output to corresponding DIO ping.		

F81216 Second Super IO Configuration



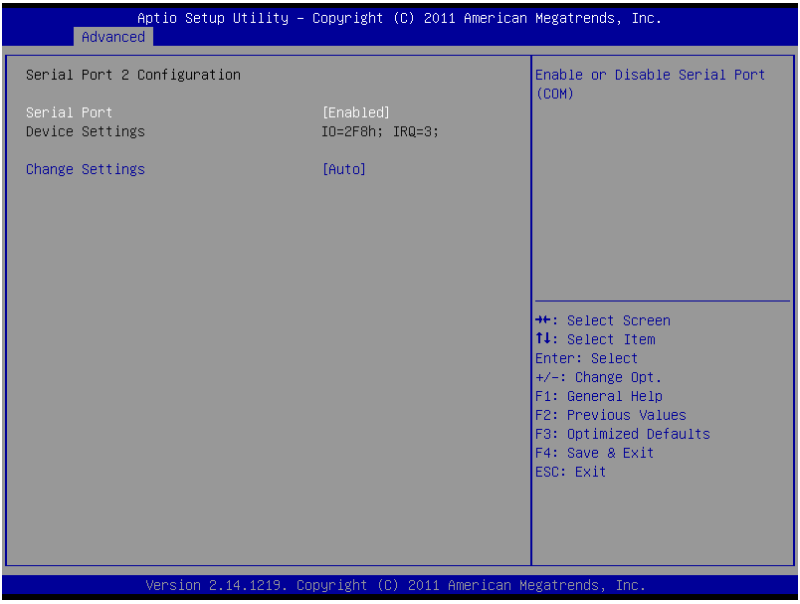
Serial Port 6 Configuration



Options summary:

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disable correspond serial port.		
Change Settings	Auto	Default
	IO=2B0h; IRQ=5;	
	IO=2B8h; IRQ=5;	
Allows BIOS to Select Serial Port resource.		
Device Mode	Serial Port Function Mode	Default
	IR Mode, Pulse 1.6us,Full Duplex	
	IR Mode, Pulse 1.6us,Half Duplex	
	IR Mode, Pulse 3/16 Bit Time, Full Duplex	
	IR Mode, Pulse 3/16 Bit Time, Half Duplex	
Enable or Disable Serial Port (COM).		

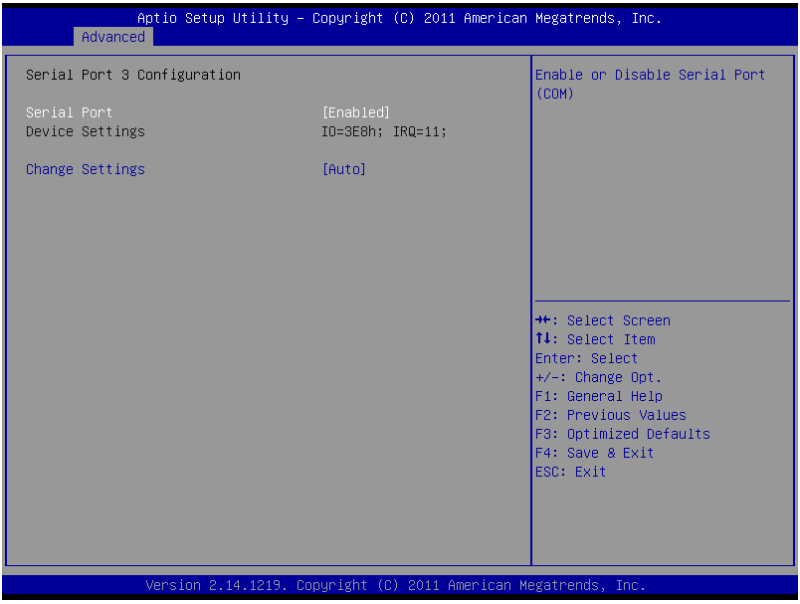
Serial Port 7 Configuration



Options summary:

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disable correspond serial port.		
Change Settings	Auto	Default
	IO=2B0h; IRQ=5;	
	IO=2B8h; IRQ=5;	
Allows BIOS to Select Serial Port resource.		

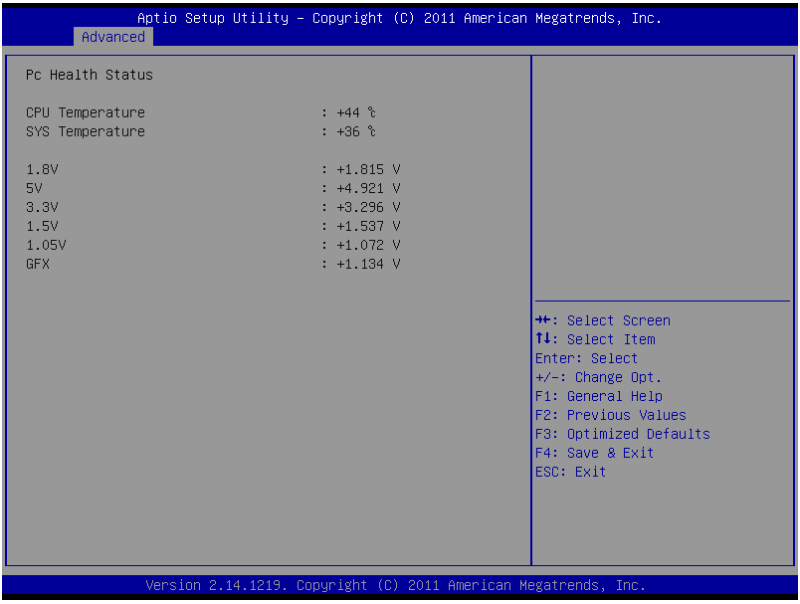
Serial Port 8 Configuration



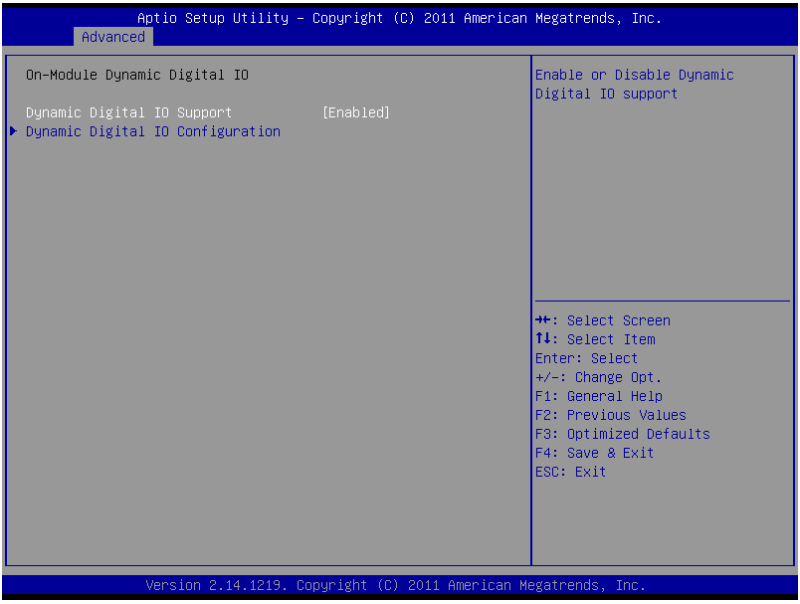
Options summary:

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disable correspond serial port.		
Change Settings	Auto	Default
	IO=270h; IRQ=5;	
	IO=278h; IRQ=5;	
Allows BIOS to Select Serial Port resource.		

On-Module H/W Monitor



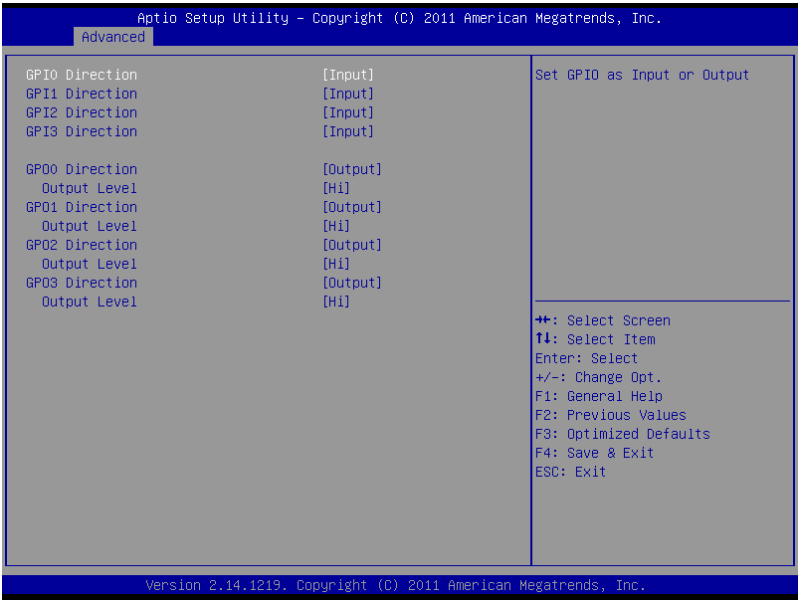
On-Module Dynamic Digital IO



Options summary:

Dynamic Digital IO Support	Disabled	Default
	Enabled	
En/Disable Dynamic Digital IO Support.		

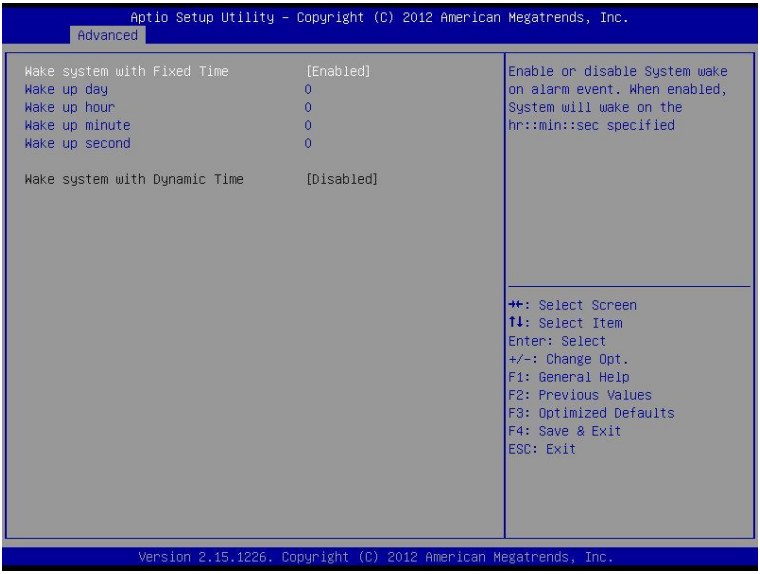
Dynamic Digital IO Configuration



Options summary:

GPI0~3 Direction	Input	Default
	Output	
Set GPIO as Input or Output.		
GPO0~3 Direction	Input	
	Output	Default
Set GPIO as Input or Output.		
Output Level	Low	
	Hi	Default
Allows BIOS to select high/low voltage level to output to corresponding DIO ping.		

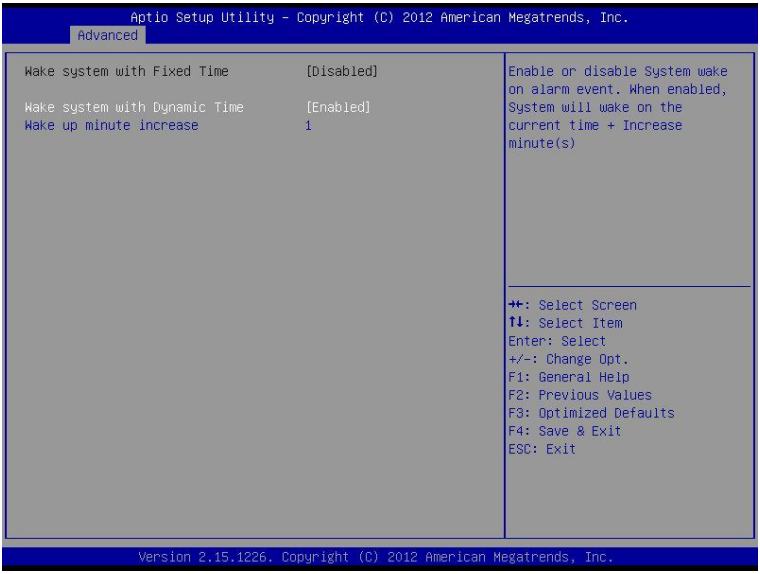
S5 RTC Wake Settings (Fixed Time)



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		

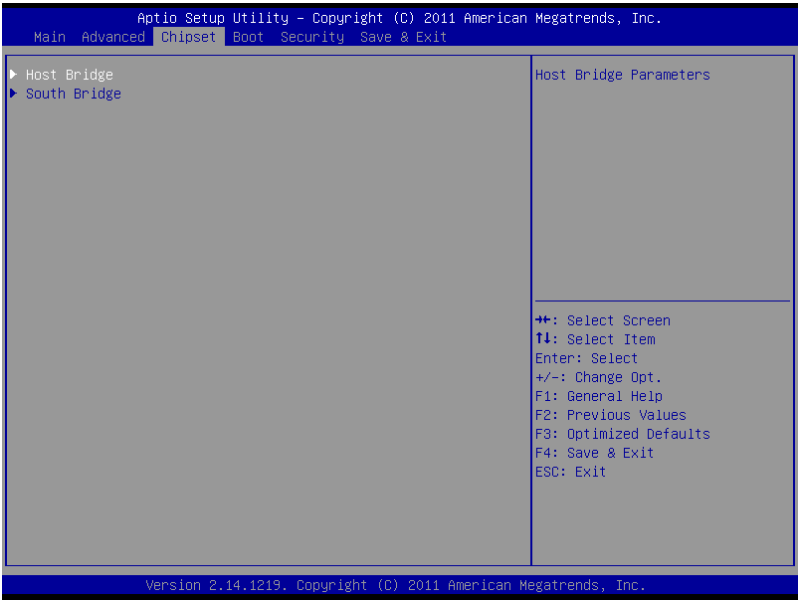
S5 RTC Wake Settings (Dynamic Time)



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		

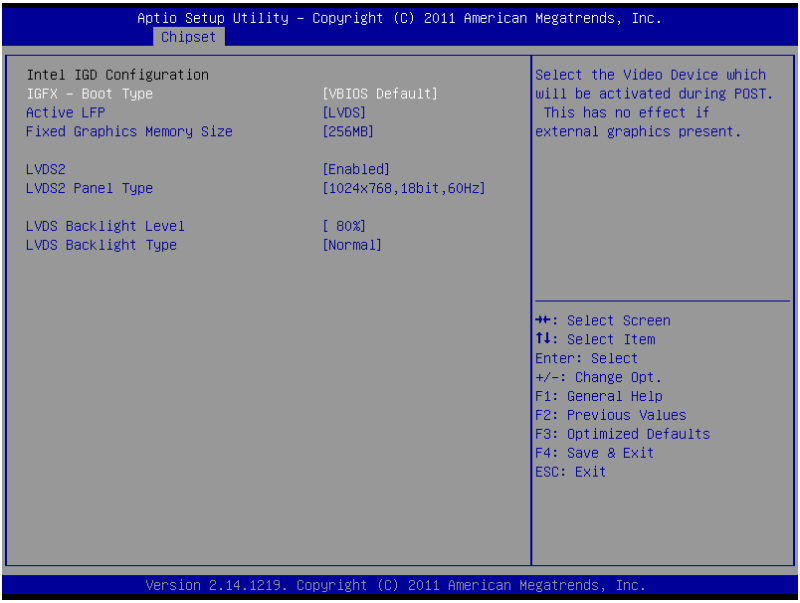
Setup submenu: Chipset



Host Bridge


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Chipset
Intel IGD Configuration
******* Memory Information *******
Memory Frequency 1067 MHz(DDR3)
Total Memory 4096 MB
DIMM#1 4096 MB
Config Intel IGD Settings.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Intel IGD Configuration

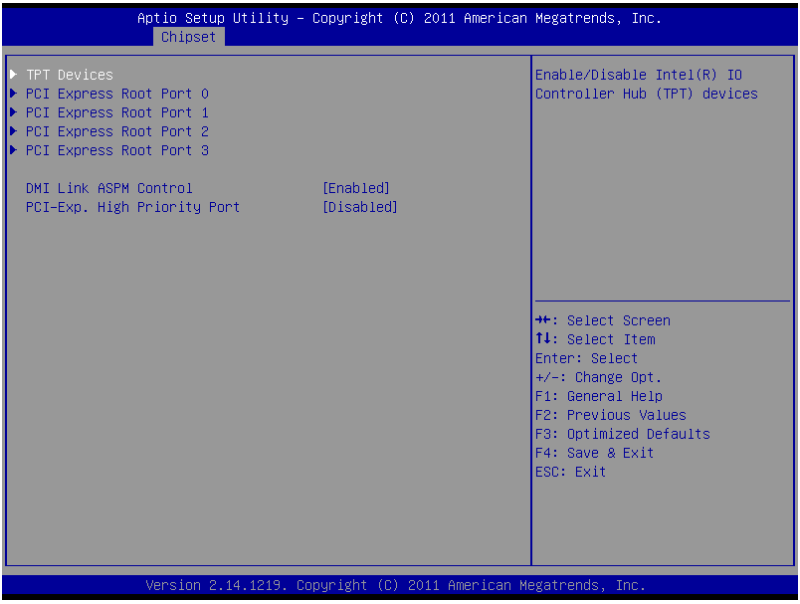


Options summary:

IGFX - Boot Type	VBIOS Default	Default
	CRT	
	LVDS	
	DVI-I	
Select the Video Device which will be activated during POST.		
Active LFP	No LVDS	
	LVDS	Default
Select the Active LFP Configuration.\n\nNo LVDS: VBIOS does not enable LVDS.\nInt-LVDS:VBIOS enables LVDS driver by Integrated encoder.\nSDVO LVDS:VBIOS enables LVDS driver by SDVO encoder.\neDP Port-A:LFP Driven by Int-DisplayPort encoder from Port-A.\neDP Port-D:LFP Driven by Int-DisplayPort encoder from Port-D(through PCH).		
Fixed Graphics Memory Size	128M	
	256M	Default
Configure Fixed Graphics Memory Size		
LVDS2	Disabled	
	Enabled	Default
LVDS(CH7511) Enabled/Disabled		

LVDS2 Panel Type	640x480,18bit,60Hz	
	800x480,18bit,60Hz	
	800x600,18bit,60Hz	
	1024x600,18bit,60Hz	
	1024x768,18bit,60Hz	Default
	1024x768,24bit,60Hz	
	1280x768,24bit,60Hz	
	1280x1024,48bit,60Hz	
	1366x768,24bit,60Hz	
	1440x900,48bit,60Hz	
	1600x1200,48bit,60Hz	
	1920x1080,48bit,60Hz	
	1920x1200,48bit,60Hz	
Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.		
LVDS Backlight Level	0%	
	10%	
	20%	
	30%	
	40%	
	50%	
	60%	
	70%	
	80%	Default
	90%	
	100%	
Select Backlight brightness of LVDS.		
LVDS Backlight Type	Normal	Default
	Inverted	
Select Backlight Control Type		

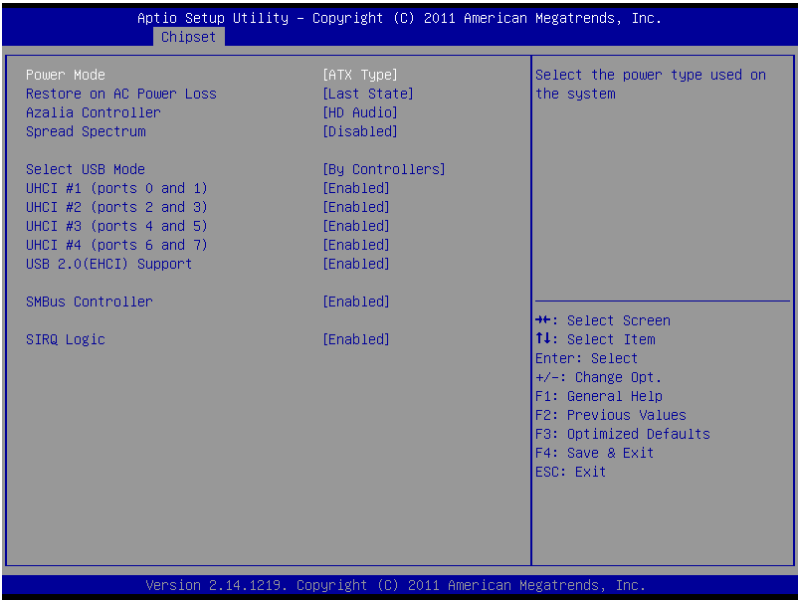
South Bridge



Options summary:

DMI Link ASPM Control	Enabled	Default
	Disabled	
The control of Active State Power Management on both NB side and SB side of the DMI Link.		
PCI-Exp. High Priority Port	Disabled	Default
	Port 0	
	Port 1	
	Port 2	
	Port 3	
Select a PCI Express High Priority Port.		

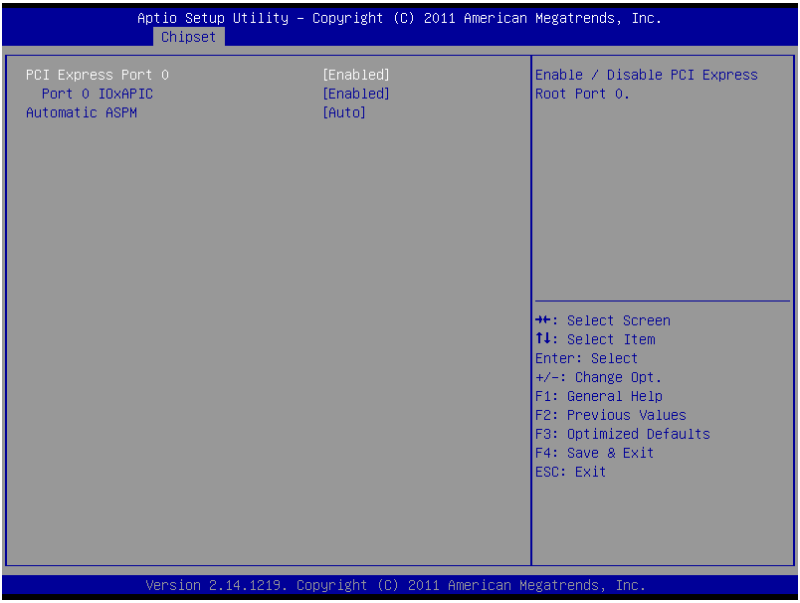
TPT Device


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Chipset
Power Mode [ATX Type]
Restore on AC Power Loss [Last State]
Azalia Controller [HD Audio]
Spread Spectrum [Disabled]
Select USB Mode [By Controllers]
UHCI #1 (ports 0 and 1) [Enabled]
UHCI #2 (ports 2 and 3) [Enabled]
UHCI #3 (ports 4 and 5) [Enabled]
UHCI #4 (ports 6 and 7) [Enabled]
USB 2.0(EHCI) Support [Enabled]
SMBus Controller [Enabled]
SIRQ Logic [Enabled]
Select the power type used on the system
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Options summary:

Power Mode	ATX Type	Default
	AT Type	
Select the power type used on the system		
Restore on AC Power Loss	Last State	Default
	Always On	
	Always Off	
Power Failure feature / AC Power Loss feature		
Azalia Controller	Disabled	
	HD Audio	Default
Select a OnBoard Azalia Configuration.		
Spread Spectrum	Enabled	
	Disabled	Default
Enable/Disable Clock Generator Spread Spectrum function		
Select USB Mode	By Controllers	Default
	By Ports	
Select USB mode to control USB ports.		
UHCI #1 (ports 0 and 1)	Enabled	Default
	Disabled	
Control the USB UHCI (USB 1.1) functions. Disable from highest to lowest controller.		
UHCI #2 (ports 2 and 3)	Enabled	Default
	Disabled	
Control the USB UHCI (USB 1.1) functions. Disable from highest to lowest controller.		
UHCI #3 (ports 4 and 5)	Enabled	Default
	Disabled	
Control the USB UHCI (USB 1.1) functions. Disable from highest to lowest controller.		
UHCI #4 (ports 6 and 7)	Enabled	Default
	Disabled	
Control the USB UHCI (USB 1.1) functions. Disable from highest to lowest controller.		
USB 2.0(EHCI) Support"	Enabled	Default
	Disabled	
Enable or Disable USB 2.0 (EHCI) Support.		
SMBus Controller"	Enabled	Default
	Disabled	
Enable or Disable OnChip SMBus Controller.		
SIRQ Logic	Enabled	Default
	Disabled	
Enable or Disable SIRQ logic.		

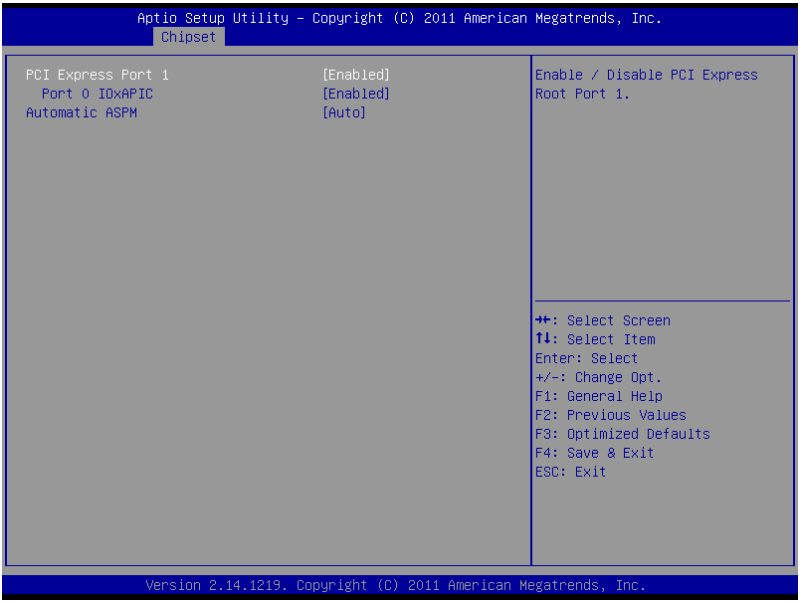
PCI Express Root Port 0



Options summary:

PCI Express Port 0	Enabled	Default
	Disabled	
Enable / Disable PCI Express Root Port 0.		
Port 0 IOxAPIC	Enabled	Default
	Disabled	
Enable / Disable PCI Express Root Port 0 I/O APIC.		
Automatic ASPM	Manual	
	Auto	Default
Automatically enable ASPM based on reported capabilities and known issues.		

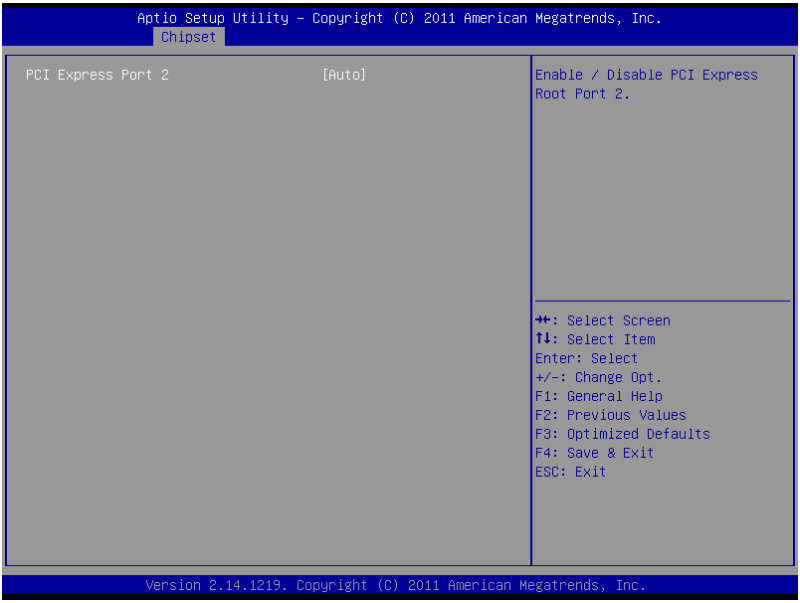
PCI Express Root Port 1



Options summary:

PCI Express Port 1	Enabled	Default
	Disabled	
Enable / Disable PCI Express Root Port 1.		
Port 0 IOxAPIC	Enabled	Default
	Disabled	
Enable / Disable PCI Express Root Port 0 I/O APIC.		
Automatic ASPM	Manual	
	Auto	Default
Automatically enable ASPM based on reported capabilities and known issues.		

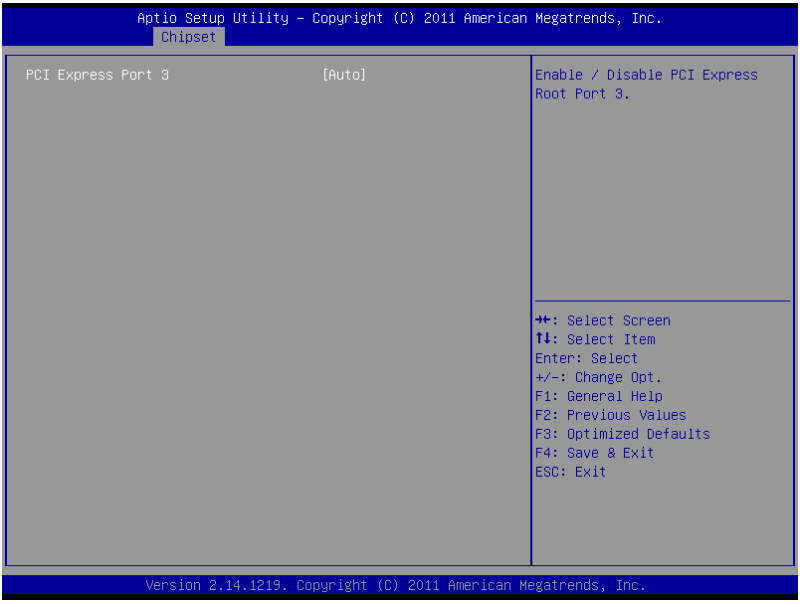
PCI Express Root Port 2



Options summary:

PCI Express Port 2	Enabled	
	Disabled	
	Auto	Default
Enable / Disable PCI Express Root Port 2.		

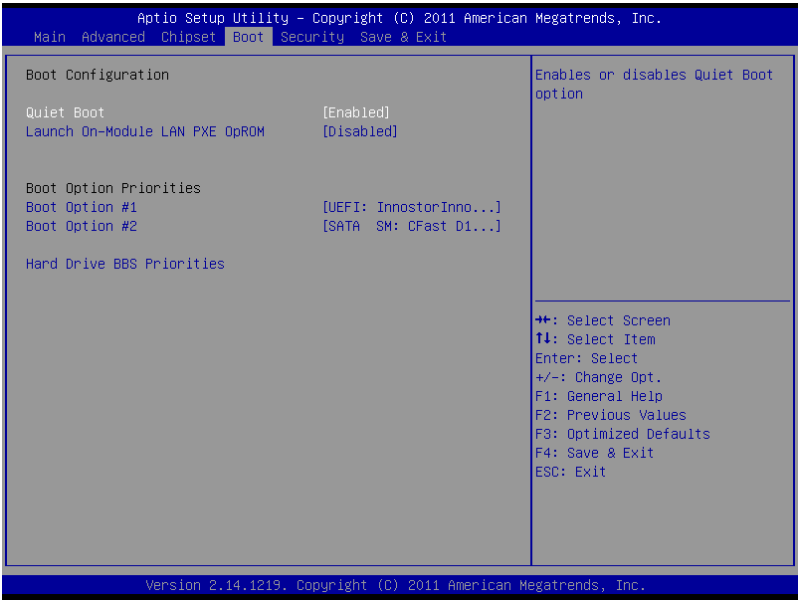
PCI Express Root Port 3



Options summary:

PCI Express Port 3	Enabled	
	Disabled	
	Auto	Default
Enable / Disable PCI Express Root Port 3.		

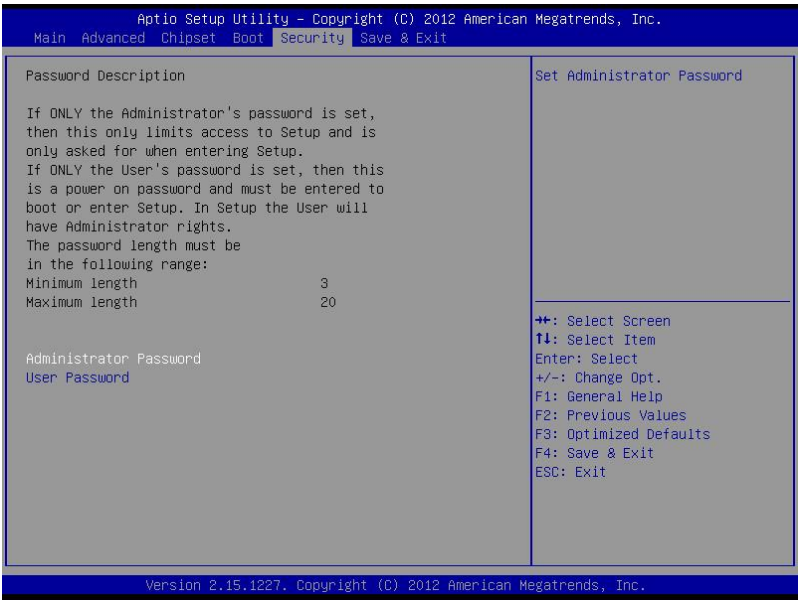
Setup submenu: Boot



Options summary:

Quiet Boot	Disabled	
	Enabled	Default
En/Disable showing boot logo.		
Launch On-Module LAN PXE OpROM	Disabled	Default
	Enabled	
En/Disable Legacy Boot Option for On-Module I82583V.		

Security



Change User/Supervisor Password

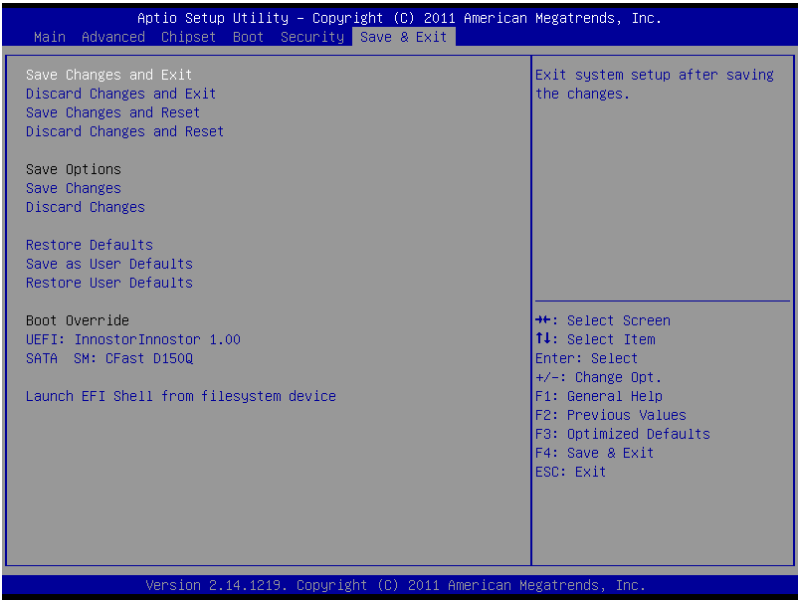
You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

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 AEC-6913 comes with a CD-ROM that contains all drivers your need.

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 Audio Driver

Step 5 – Install AHCI Driver

Step 6 – Install USB3.0 Driver

Step 7 – Install Serial Port Driver (Optional)

Please read following instructions for detailed installations.

4.1 Installation:

Insert the AEC-6913 CD-ROM into the CD-ROM Drive. And install the drivers from Step 1 to Step 7 in order.

Step 1 – Install Chipset Driver

1. Click on the ***STEP1-CHIPEST*** folder and select the OS folder your system is
2. Double click on ***.exe*** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you to install the driver automatically

Step 2 – Install VGA Driver

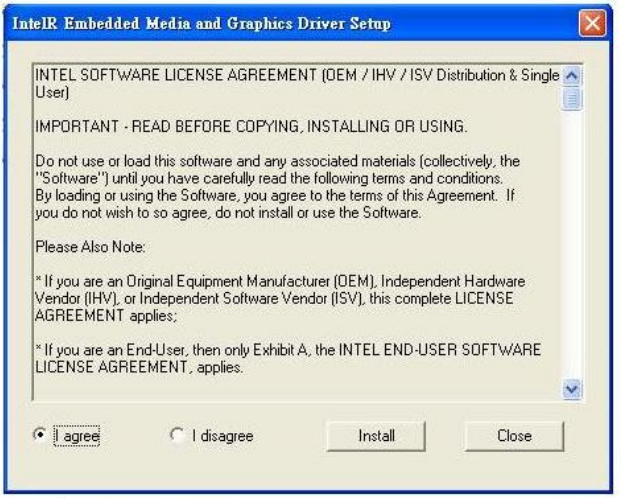
For Windows® 7

1. Click on the ***STEP2-VGA*** folder and select the folder of ***WIN7_32***
2. Double click on the ***Setup.exe*** file
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

For Windows® XP

1. Click on the ***STEP2-VGA*** folder and select the folder of ***WINXP_32***
2. Install IEMGD
   - Double click on the ***WindowsDriverSETUP.bat***
   - Select the configuration
   - Follow the instructions that the window shows

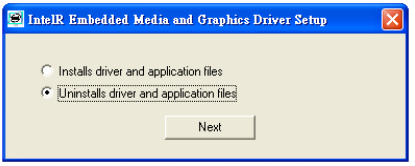
- The system will help you install the driver automatically



If you want to update driver, please uninstall driver first.

Uninstall IEMGD

1. Double click on the ***WindowsDriverSETUP.bat***
2. Follow the instructions that the window shows
3. The system will help you uninstall the driver automatically



Step 3 – Install LAN Driver

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

Step 4 – Install Audio Driver

1. Click on the ***STEP4-AUDIO*** folder and select the OS folder your system is
2. Double click on ***Setup.exe*** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you to install the driver automatically

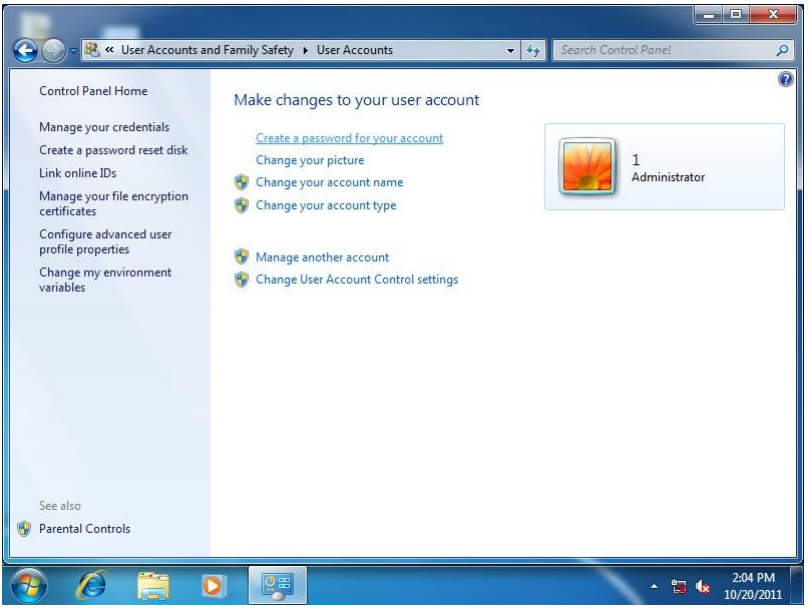
Step 5 – Install AHCI Driver

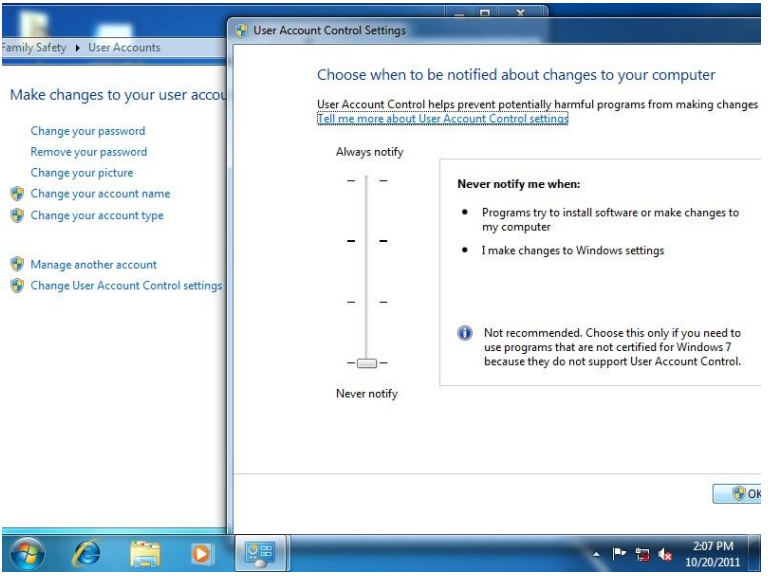
Please refer to Appendix C AHCI Setting

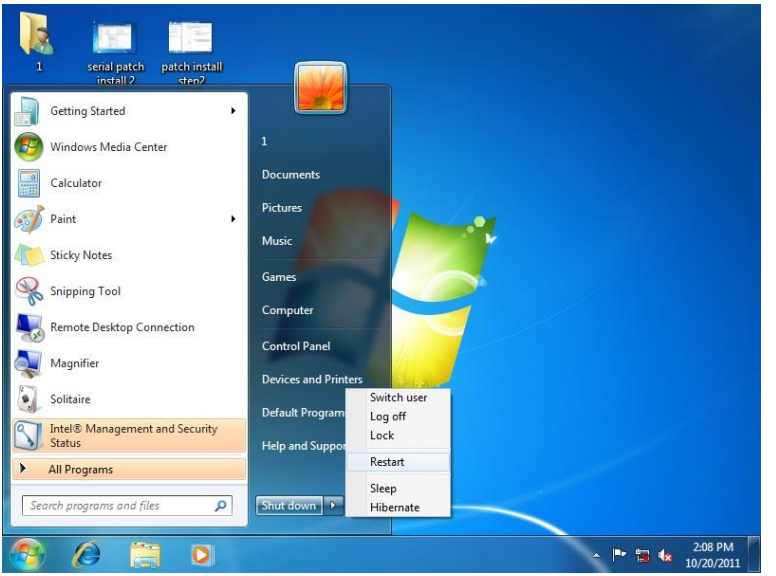
Step 6 – Install USB3.0 Driver

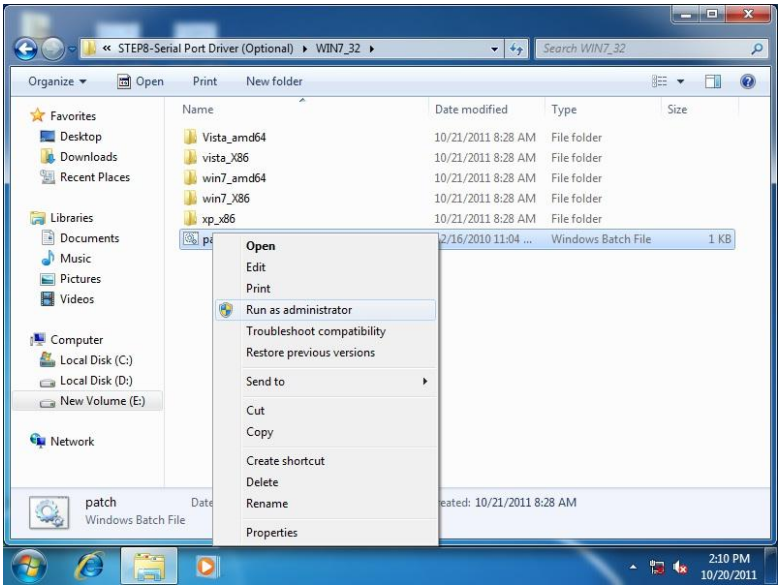
1. Click on the ***Step 6 - USB30 Driver*** folder and double click on the ***RENESAS-USB3-Host-Driver-21160-setup.exe*** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

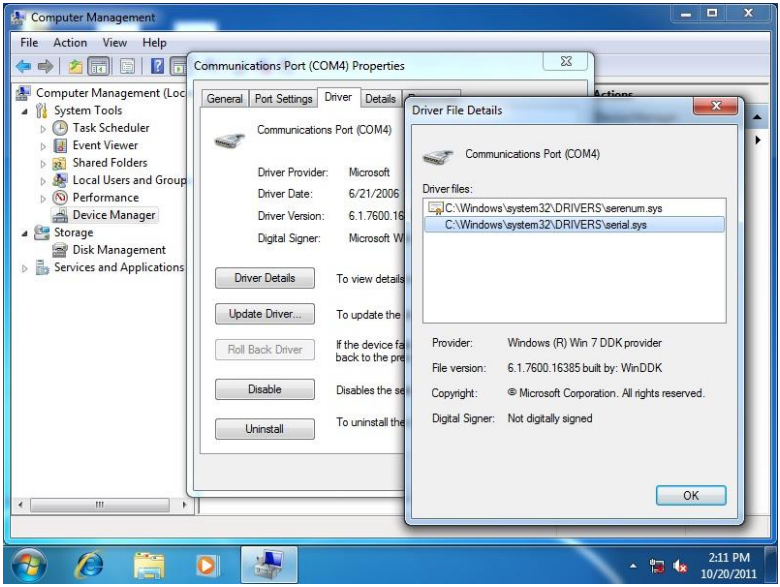
Step 7 – Install Serial Port Driver (Optional)




Family Safety ▸ User Accounts
Make changes to your user accou
Change your password
Remove your password
Change your picture
Change your account name
Change your account type
Manage another account
Change User Account Control settings
User Account Control Settings
Choose when to be notified about changes to your computer
User Account Control helps prevent potentially harmful programs from making changes
Tell me more about User Account Control settings
Always notify
Never notify
Never notify me when:
Programs try to install software or make changes to my computer
I make changes to Windows settings
Not recommended. Choose this only if you need to use programs that are not certified for Windows 7 because they do not support User Account Control.
OK
2:07 PM
10/20/2011


1
serial patch install 2
patch install step2
Getting Started
Windows Media Center
Calculator
Paint
Sticky Notes
Snipping Tool
Remote Desktop Connection
Magnifier
Solitaire
Intel® Management and Security Status
All Programs
Search programs and files
1
Documents
Pictures
Music
Games
Computer
Control Panel
Devices and Printers
Default Program
Help and Suppor
Shut down
Switch user
Log off
Lock
Restart
Sleep
Hibernate
2:08 PM
10/20/2011


STEP8-Serial Port Driver (Optional) ▸ WIN7_32 ▸
Search WIN7_32
Organize
Open
Print
New folder
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
Local Disk (D:)
New Volume (E:)
Network
Name
Date modified
Type
Size
Vista_amd64 10/21/2011 8:28 AM File folder
vista_X86 10/21/2011 8:28 AM File folder
win7_amd64 10/21/2011 8:28 AM File folder
win7_X86 10/21/2011 8:28 AM File folder
xp_x86 10/21/2011 8:28 AM File folder
Windows Batch File 1 KB
Open
Edit
Print
Run as administrator
Troubleshoot compatibility
Restore previous versions
Send to
Cut
Copy
Create shortcut
Delete
Rename
Properties
patch
Windows Batch File
2:10 PM
10/20/2011


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

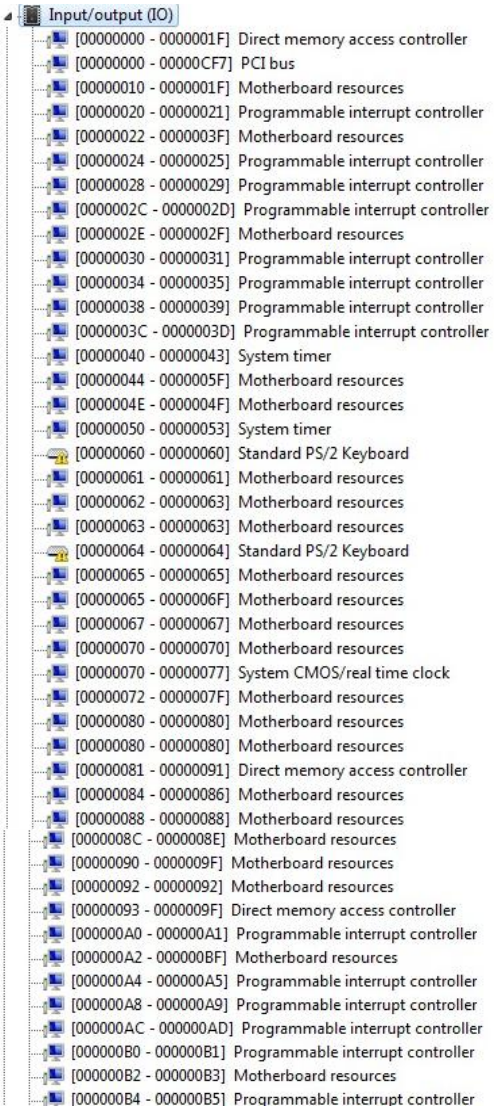
```
*****************************************************************************
VOID   SIOEnterMBPnPMode(){
        IOWriteByte(SIOIndex, 0x87);
        IOWriteByte(SIOIndex, 0x87);
}

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

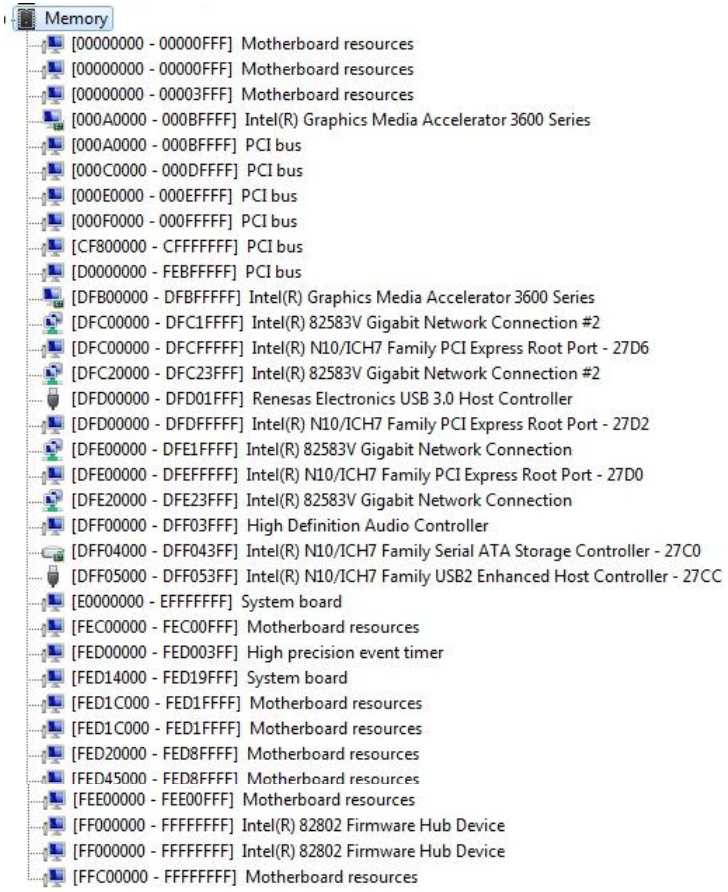
I/O Information

B.1 I/O Address Map

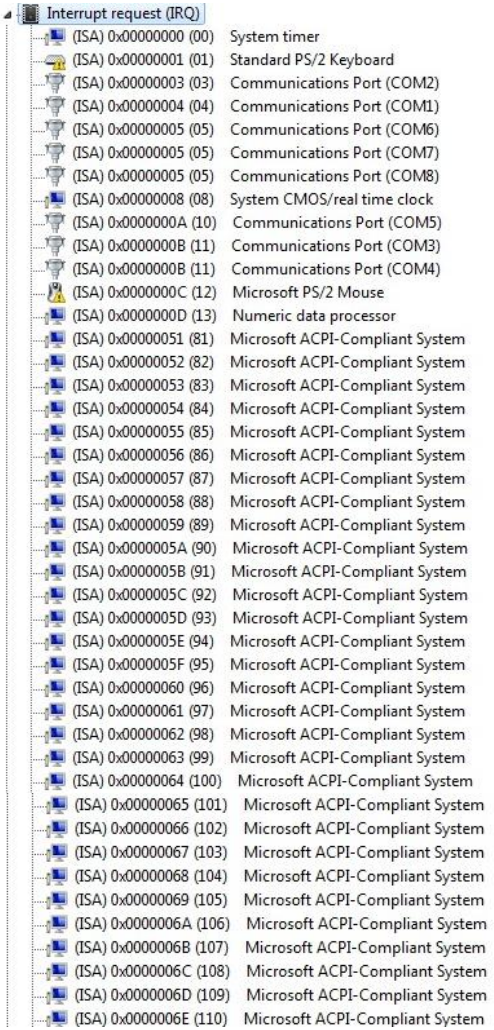


- [000000B8 - 000000B9] Programmable interrupt controller
- [000000BC - 000000BD] Programmable interrupt controller
- [000000C0 - 000000DF] Direct memory access controller
- [000000E0 - 000000EF] Motherboard resources
- [000000F0 - 000000F0] Numeric data processor
- [00000200 - 0000020F] Motherboard resources
- [00000210 - 0000021F] Motherboard resources
- [00000220 - 0000022F] Motherboard resources
- [00000270 - 00000277] Communications Port (COM8)
- [00000284 - 00000293] Motherboard resources
- [000002B0 - 000002B7] Communications Port (COM6)
- [000002B8 - 000002BF] Communications Port (COM7)
- [000002D0 - 000002D7] Communications Port (COM5)
- [000002E8 - 000002EF] Communications Port (COM4)
- [000002F8 - 000002FF] Communications Port (COM2)
- [000003B0 - 000003BB] Intel(R) Graphics Media Accelerator 3600 Series
- [000003C0 - 000003DF] Intel(R) Graphics Media Accelerator 3600 Series
- [000003E8 - 000003EF] Communications Port (COM3)
- [000003F8 - 000003FF] Communications Port (COM1)
- [00000400 - 0000047F] Motherboard resources
- [00000400 - 0000047F] Motherboard resources
- [000004D0 - 000004D1] Motherboard resources
- [000004D0 - 000004D1] Programmable interrupt controller
- [00000500 - 0000053F] Motherboard resources
- [00000500 - 0000057F] Motherboard resources
- [00000600 - 0000061F] Motherboard resources
- [00000600 - 0000061F] Motherboard resources
- [00000680 - 0000069F] Motherboard resources
- [000006A0 - 000006AF] Motherboard resources
- [000006B0 - 000006EF] Motherboard resources
- [00000D00 - 0000FFFF] PCI bus
- [00001000 - 0000100F] Motherboard resources
- [0000D000 - 0000DFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D6
- [0000E000 - 0000EFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0
- [0000F000 - 0000F01F] Intel(R) N10/ICH7 Family SMBus Controller - 27DA
- [0000F020 - 0000F03F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CB
- [0000F040 - 0000F05F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
- [0000F060 - 0000F07F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C9
- [0000F080 - 0000F09F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C8
- [0000F0A0 - 0000F0AF] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
- [0000F0B0 - 0000F0B3] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
- [0000F0C0 - 0000F0C7] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
- [0000F0D0 - 0000F0D3] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
- [0000F0E0 - 0000F0E7] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
- [0000F0F0 - 0000F0F7] Intel(R) Graphics Media Accelerator 3600 Series
- [0000FFFF - 0000FFFF] Motherboard resources
- [0000FFFF - 0000FFFF] Motherboard resources

B.2 Memory Address Map



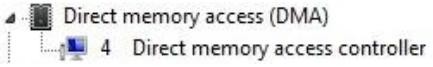
B.3 IRQ Mapping Chart



(ISA) 0x0000006F (111) Microsoft ACPI-Compliant System
(ISA) 0x00000070 (112) Microsoft ACPI-Compliant System
(ISA) 0x00000071 (113) Microsoft ACPI-Compliant System
(ISA) 0x00000072 (114) Microsoft ACPI-Compliant System
(ISA) 0x00000073 (115) Microsoft ACPI-Compliant System
(ISA) 0x00000074 (116) Microsoft ACPI-Compliant System
(ISA) 0x00000075 (117) Microsoft ACPI-Compliant System
(ISA) 0x00000076 (118) Microsoft ACPI-Compliant System
(ISA) 0x00000077 (119) Microsoft ACPI-Compliant System
(ISA) 0x00000078 (120) Microsoft ACPI-Compliant System
(ISA) 0x00000079 (121) Microsoft ACPI-Compliant System
(ISA) 0x0000007A (122) Microsoft ACPI-Compliant System
(ISA) 0x0000007B (123) Microsoft ACPI-Compliant System
(ISA) 0x0000007C (124) Microsoft ACPI-Compliant System
(ISA) 0x0000007D (125) Microsoft ACPI-Compliant System
(ISA) 0x0000007E (126) Microsoft ACPI-Compliant System
(ISA) 0x0000007F (127) Microsoft ACPI-Compliant System
(ISA) 0x00000080 (128) Microsoft ACPI-Compliant System
(ISA) 0x00000081 (129) Microsoft ACPI-Compliant System
(ISA) 0x00000082 (130) Microsoft ACPI-Compliant System
(ISA) 0x00000083 (131) Microsoft ACPI-Compliant System
(ISA) 0x00000084 (132) Microsoft ACPI-Compliant System
(ISA) 0x00000085 (133) Microsoft ACPI-Compliant System
(ISA) 0x00000086 (134) Microsoft ACPI-Compliant System
(ISA) 0x00000087 (135) Microsoft ACPI-Compliant System
(ISA) 0x00000088 (136) Microsoft ACPI-Compliant System
(ISA) 0x00000089 (137) Microsoft ACPI-Compliant System
(ISA) 0x0000008A (138) Microsoft ACPI-Compliant System
(ISA) 0x0000008B (139) Microsoft ACPI-Compliant System
(ISA) 0x0000008C (140) Microsoft ACPI-Compliant System
(ISA) 0x0000008D (141) Microsoft ACPI-Compliant System
(ISA) 0x0000008E (142) Microsoft ACPI-Compliant System
(ISA) 0x0000008F (143) Microsoft ACPI-Compliant System
(ISA) 0x00000090 (144) Microsoft ACPI-Compliant System
(ISA) 0x00000091 (145) Microsoft ACPI-Compliant System
(ISA) 0x00000092 (146) Microsoft ACPI-Compliant System
(ISA) 0x00000093 (147) Microsoft ACPI-Compliant System
(ISA) 0x00000094 (148) Microsoft ACPI-Compliant System
(ISA) 0x00000095 (149) Microsoft ACPI-Compliant System
(ISA) 0x00000096 (150) Microsoft ACPI-Compliant System
(ISA) 0x00000097 (151) Microsoft ACPI-Compliant System
(ISA) 0x00000098 (152) Microsoft ACPI-Compliant System
(ISA) 0x00000099 (153) Microsoft ACPI-Compliant System
(ISA) 0x0000009A (154) Microsoft ACPI-Compliant System
(ISA) 0x0000009B (155) Microsoft ACPI-Compliant System
(ISA) 0x0000009C (156) Microsoft ACPI-Compliant System
(ISA) 0x0000009D (157) Microsoft ACPI-Compliant System
(ISA) 0x0000009E (158) Microsoft ACPI-Compliant System
(ISA) 0x0000009F (159) Microsoft ACPI-Compliant System
(ISA) 0x000000A0 (160) Microsoft ACPI-Compliant System

(ISA) 0x000000A1 (161) Microsoft ACPI-Compliant System
(ISA) 0x000000A2 (162) Microsoft ACPI-Compliant System
(ISA) 0x000000A3 (163) Microsoft ACPI-Compliant System
(ISA) 0x000000A4 (164) Microsoft ACPI-Compliant System
(ISA) 0x000000A5 (165) Microsoft ACPI-Compliant System
(ISA) 0x000000A6 (166) Microsoft ACPI-Compliant System
(ISA) 0x000000A7 (167) Microsoft ACPI-Compliant System
(ISA) 0x000000A8 (168) Microsoft ACPI-Compliant System
(ISA) 0x000000A9 (169) Microsoft ACPI-Compliant System
(ISA) 0x000000AA (170) Microsoft ACPI-Compliant System
(ISA) 0x000000AB (171) Microsoft ACPI-Compliant System
(ISA) 0x000000AC (172) Microsoft ACPI-Compliant System
(ISA) 0x000000AD (173) Microsoft ACPI-Compliant System
(ISA) 0x000000AE (174) Microsoft ACPI-Compliant System
(ISA) 0x000000AF (175) Microsoft ACPI-Compliant System
(ISA) 0x000000B0 (176) Microsoft ACPI-Compliant System
(ISA) 0x000000B1 (177) Microsoft ACPI-Compliant System
(ISA) 0x000000B2 (178) Microsoft ACPI-Compliant System
(ISA) 0x000000B3 (179) Microsoft ACPI-Compliant System
(ISA) 0x000000B4 (180) Microsoft ACPI-Compliant System
(ISA) 0x000000B5 (181) Microsoft ACPI-Compliant System
(ISA) 0x000000B6 (182) Microsoft ACPI-Compliant System
(ISA) 0x000000B7 (183) Microsoft ACPI-Compliant System
(ISA) 0x000000B8 (184) Microsoft ACPI-Compliant System
(ISA) 0x000000B9 (185) Microsoft ACPI-Compliant System
(ISA) 0x000000BA (186) Microsoft ACPI-Compliant System
(ISA) 0x000000BB (187) Microsoft ACPI-Compliant System
(ISA) 0x000000BC (188) Microsoft ACPI-Compliant System
(ISA) 0x000000BD (189) Microsoft ACPI-Compliant System
(ISA) 0x000000BE (190) Microsoft ACPI-Compliant System
(PCI) 0x00000007 (07) Intel(R) N10/ICH7 Family SMBus Controller - 27DA
(PCI) 0x00000010 (16) Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0
(PCI) 0x00000010 (16) Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CB
(PCI) 0x00000011 (17) Intel(R) N10/ICH7 Family PCI Express Root Port - 27D2
(PCI) 0x00000012 (18) Intel(R) N10/ICH7 Family PCI Express Root Port - 27D4
(PCI) 0x00000012 (18) Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
(PCI) 0x00000013 (19) Intel(R) N10/ICH7 Family PCI Express Root Port - 27D6
(PCI) 0x00000013 (19) Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
(PCI) 0x00000013 (19) Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C9
(PCI) 0x00000016 (22) High Definition Audio Controller
(PCI) 0x00000017 (23) Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C8
(PCI) 0x00000017 (23) Intel(R) N10/ICH7 Family USB2 Enhanced Host Controller - 27CC
(PCI) 0xFFFFFFF1 (-15) Renesas Electronics USB 3.0 Host Controller
(PCI) 0xFFFFFFF2 (-14) Renesas Electronics USB 3.0 Host Controller
(PCI) 0xFFFFFFF3 (-13) Renesas Electronics USB 3.0 Host Controller
(PCI) 0xFFFFFFF4 (-12) Renesas Electronics USB 3.0 Host Controller
(PCI) 0xFFFFFFF5 (-11) Renesas Electronics USB 3.0 Host Controller
(PCI) 0xFFFFFFF6 (-10) Renesas Electronics USB 3.0 Host Controller
(PCI) 0xFFFFFFF7 (-9) Renesas Electronics USB 3.0 Host Controller
(PCI) 0xFFFFFFF8 (-8) Renesas Electronics USB 3.0 Host Controller
(PCI) 0xFFFFFFF9 (-7) Intel(R) 82583V Gigabit Network Connection #2

B.4 DMA Channel Assignments



Appendix

C

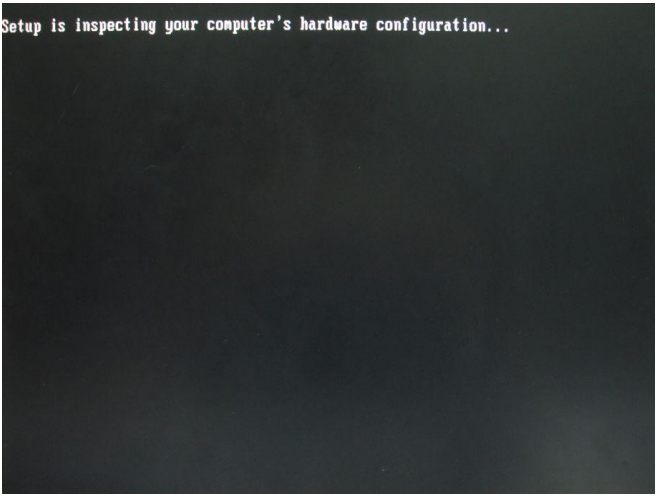
AHCI Setting

C.1 WIN XP OS installation

Step 1: Copy the files below from ***Driver CD -> "STEP5 - AHCI\ WINXP_32 " to Disk.***

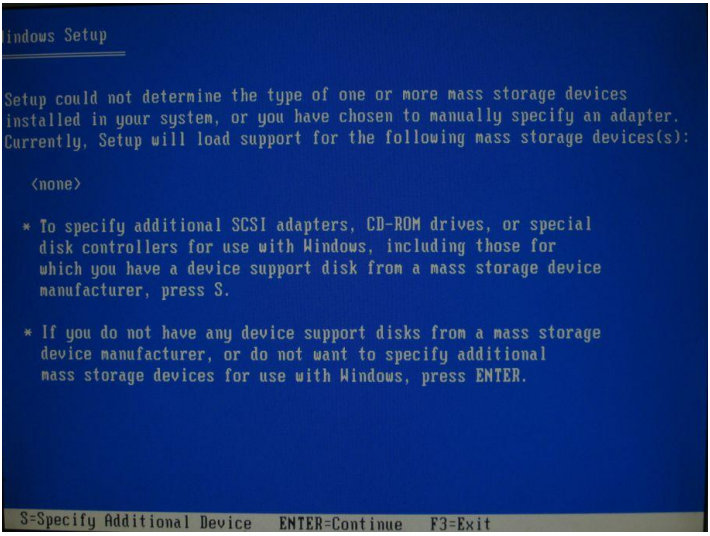
Step 2: Connect the USB Floppy (disk with AHCI files) to the board (this photo is for reference only)

Step 3: Setup OS

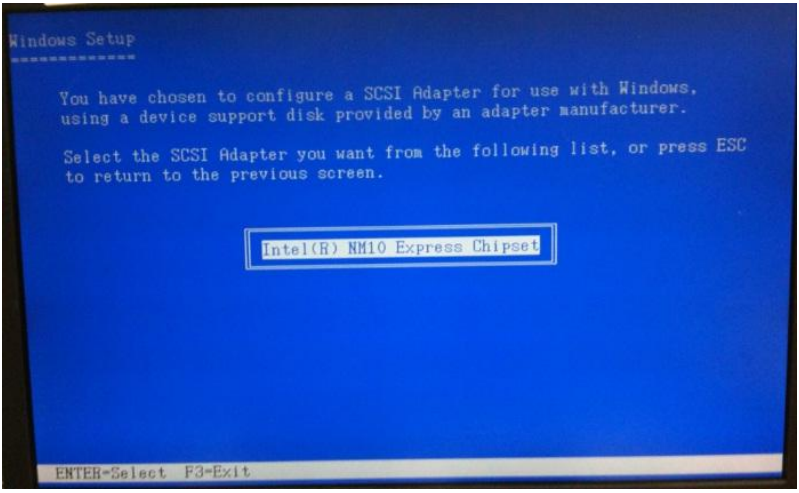


Step 4: Press "**F6**"

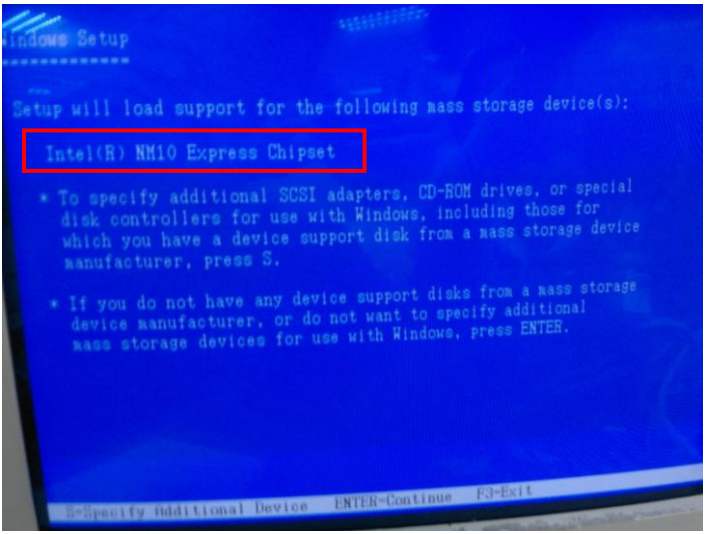
Step 5: Choose "**S**"



Step 6: Choose "**Intel(R) NM10 Express Chipset**"



Step 7: It will show the model number you select and then press "**ENTER**"



Step 8: Setup is starting Windows