IC70 Motherboard

Mini-ITX Fan SBC w/ Intel® Core™ i7/i5/Celeron® Processor, VGA, LVDS, Giga Ethernet, Mini-PCIe and PCIE x 16 slot.

USER MANUAL Version 1.1

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FCC Statement

This device complies with part 15 FCC rules. Operation is subject to the following two conditions：

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "a" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at him own expense.

Safety Precautions

- **Warning!**

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronic personnel should open the PC chassis.

- **Caution!**

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

Safety and Warranty

1. Please read these safety instructions carefully.
2. Please keep this user's manual for later reference.
3. Please 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.

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CHAPTER 1

General Information

This chapter includes IC70 Motherboard background information.

Sections include:

- Introduction
- Feature
- Motherboard Specification
- Function Block
- Board Dimensions

Chapter 1 General Information

1.1 Introduction

IC70 SBC is equipped with Intel HM55 Chipset which designed with Intel's mobile platform. Intel's HM55 platform delivers the performance and high scalability cutting-edge embedded computing application.

In peripheral connectivity, IC70 SBC with one PCIE x 16 and two Mini-PCIE slot, two SATA connectors, and eight Hi-Speed USB connectors.

Thus, IC70 SBC is designed to satisfy most of the applications in the industrial computer market, such as Gaming, POS, KIOSK, Industrial Automation, and Programmable Control System. It is a compact design to meet the demanding performance requirements of today's business and industrial applications.

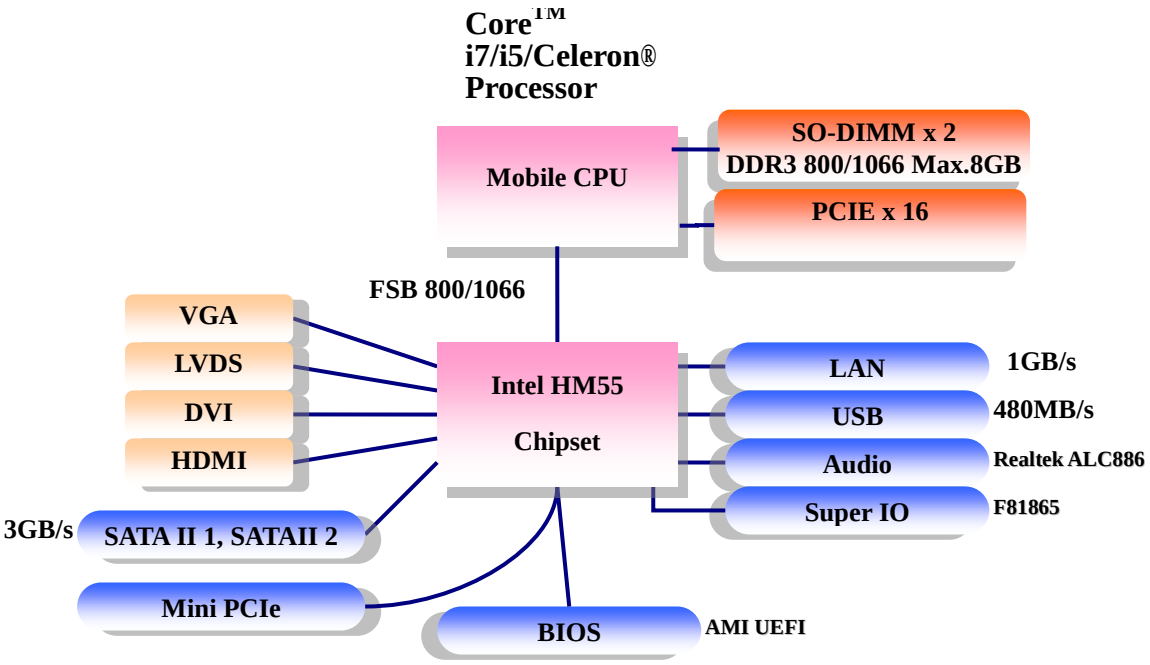
1.2 Feature

- Mini-ITX Form Factor (170mm x 170mm)
- Support Intel® Core™ i7/i5/Celeron® Processor
- System memory up to 8GB DDR3 800/1066, 2 x SO-DIMM
- Intel® 5 series Chipset (HM55)
- Integrated Gfx Gen5.75, supports DirectX 10 and OpenGL 2.1
- Dual Gigabit Ethernet
- 1 x PCIEx16 slot, 2 x Mini-PCIE, 6 x COM, 8 x USB2.0
- HDMI/DVI interface, supports max. resolution 1920 x 1200 @60Hz

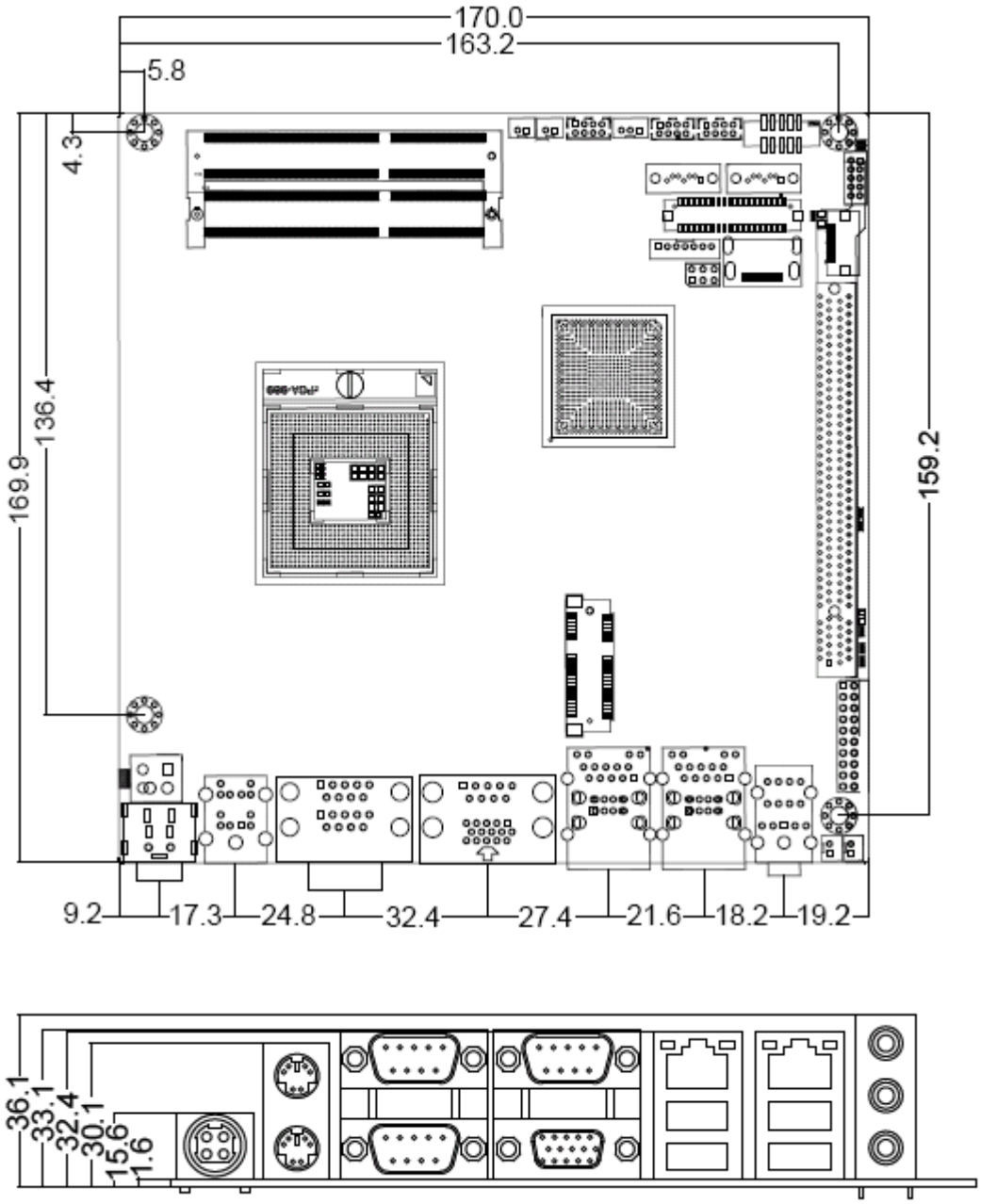
1.3 Motherboard Specifications

CPU Type	Intel® CoreTM i7/i5/Celeron® Processor
CPU FSB	1066/800 MHz
CPU Socket	Intel Socket G1(rPGA989)
Chipset	Intel® 5 series Chipset (HM55)
BIOS	AMI UEFI BIOS
VGA	Analog monitor resolution up to 2048 x 1536 @75Hz
LVDS	Dual-channel 18/24-bit LVDS, supports max resolution 1600 x 1200 @60Hz
LAN	Dual Broadcom BCM57780 PCIe GbE LAN controller
Memory Type	Two DDR3 1066/800MHz SO-DIMM supported (max. 8GB)
Super I/O	Fintek F81865
Keyboard/Mouse	2 x PS/2 Keyboard/Mouse connectors
Sound	Realtek ALC886 HD codec (Line-in, Line out, Mic-in)
USB	8 ports, USB 2.0 (4 x USB Connector, 4 x USB pin-header)
Edge Connectors	1 x +12V DC-IN Jack 2 x PS/2 connector for keyboard/mouse 2 x DB9 for COM3 & COM4 1 x VGA out connector + 1 x DB9 for COM1 2 x Gigabit LAN RJ-45 + 1 x dual USB stack connector 1 x Audio Jack for Audio (Line-in, Line-Out, Mic-in)
On Board Pin-Header Connectors	1 x 10pins pin-header for Front Panel(2x5) 1 x 3pins pin-header for CPU Fan 1 x 3pins pin-header for System FAN 1 x 8pins pin-header for 5V/12V external power(2x4) 1 x 2pins pin-header for 5V external power (Red) 1 x 2pins pin-header for 12V external power (Yellow) 1 x 4pins ATX 12V connector 2 x 2pins Audio out 2 x 8pins pin-header for USB 5/6, 7/8(2x4) 1 x 10pins pin-header for COM2(RS232)(2x5) 1 x 20pins pin-header for COM5、COM6(2x10) 1 x 40pins DF13 Connector for LVDS 1 x 3pins digital panel backlight brightness controller 1 x 7pins digital panel backlight controller 1 x 10pins pin-header for DIO(2x5) 2 x SATA connector for SATAI/II 3.0 Gb/s 1 x HDMI connecter 1 x DVI connecter by FFC
Power Connector	Input: 4-pin ATX 12V Power input
Expansion Slots	1 x PCIEx16, 2 x Mini-PCIE
Form Factor	Mini-ITX
Dimensions	170mm x 170mm
Mechanical & environmental	Operating temperature: 0 deg. C to 60 deg. C Operating Humidity: 30 ~ 90% Relative humidity, non-condensing Certification: CE, FCC, RoHS

1.4 Function Block



1.5 Board dimensions



CHAPTER 2

Installations

This chapter provides information on how to use the jumps and connectors on IC70 Motherboard.
The Sections include:

- Memory Module Installation
- I / O Equipment Installation
- Setting the Jumpers
- Connectors on IC70 Motherboard

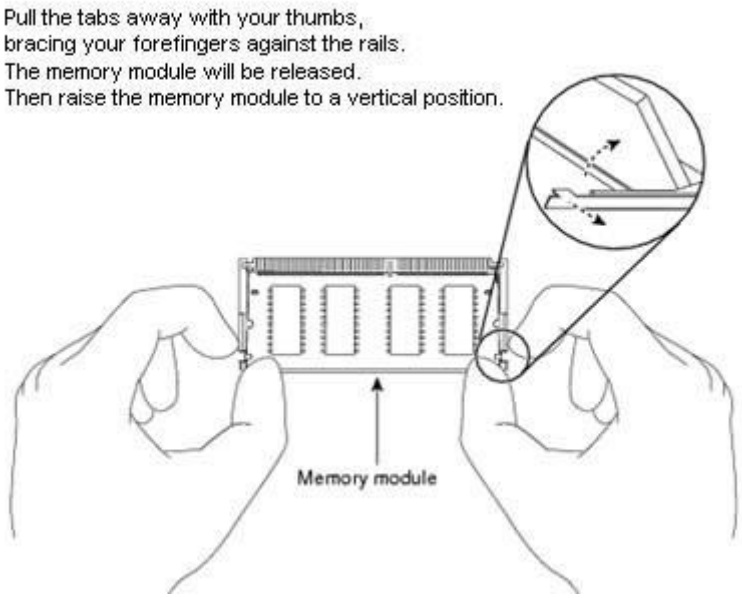
Chapter 2 Installations

2.1 Memory Module（SODIMM）Installation

The IC70 Motherboard provides two 204-pin SODIMM slot. The socket supports up to 8GB DDR3 800/1066 SDRAM. When installing the Memory device, please follow the steps below：

Step.1. Firmly insert the SODIMM at an angle into its slot. Align the SODIMM on the slot such that the notch on the SODIMM matches the break on the slot.

Step.2. Press downwards on SODIMM until the retaining clips at both ends fully snap back in place and the SODIMM is properly seated.



2.2 I/O Equipment Installation

2.2.1 12V DC-IN

The Motherboard allows plugging 12V DC-IN jack on the board without another power module converter under power consumption by Intel Socket G1 processor in HM55 with Intel® 5 series chipset.

2.2.2 PS/2 Keyboard and PS/2 Mouse

The Motherboard provides two PS/2 interface. The PS/2 connector supports Keyboard

and Mouse. In other cases, especially in embedded applications, a mouse is not used. Therefore, the BIOS standard setup menu allows you to select* “All, But Keyboard” under the “Halt On”. This allows no-keyboard operation in embedded system applications without the system halting under POST.

2.2.3 Serial COM ports

Three RS-232 connectors build in the rear I/O. Fourth optional COM ports support RS-232. When an optional touch-screen is ordered with PPC, serial com port can connect to a serial or an optional touch-screen. One optional COM port supports RS232/422/485 choice through jumper setting.

2.2.4 Internal VGA

The Motherboard has one VGA port that can be connected to an external CRT/ LCD monitor. Use VGA cable to connect to an external CRT / LCD monitor, and connect the power cable to the outlet. The VGA connector is a standard 15-pin D-SUB connector.

2.2.5 Ethernet interface

The Motherboard is equipped with Broadcom BCM57780 chipset which is fully compliant with the PCI 10/100/1000 Mbps Ethernet protocol compatible. It is supported by major network operating systems. The Ethernet ports provide two standard RJ-45 jacks.

2.2.6 USB ports

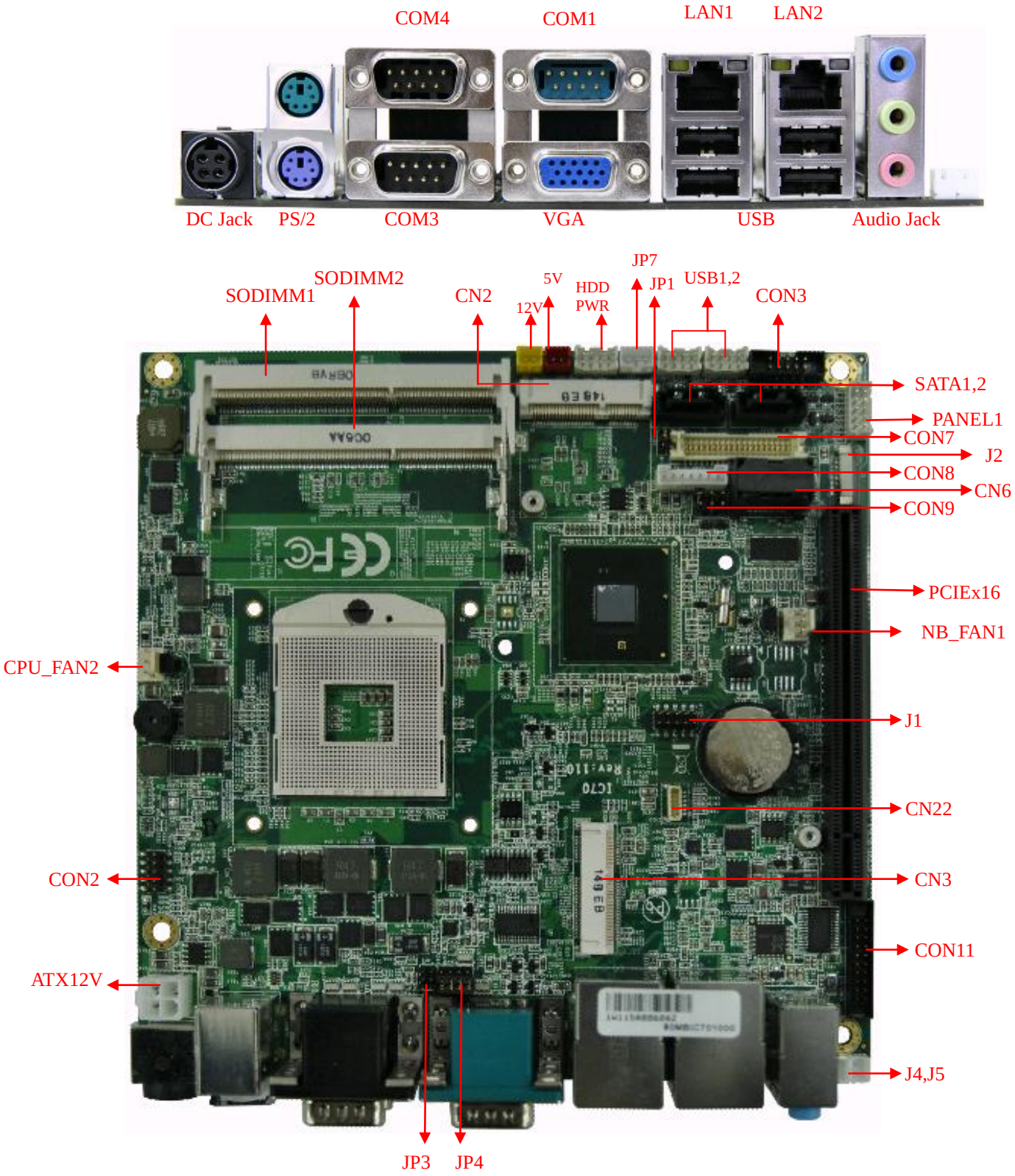
Eight USB devices (four with pin headers) may be connected to the system though an adapter cable. Various adapters may come with USB ports. USB usually connect the external system to the system. The USB ports support hot plug-in connection. Whatever, you should install the device driver before you use the device.

2.2.7 Audio Jack (Pin-header)

The Audio 5.1 channel capabilities are provided by a Realtek ALC886 chipset supporting digital audio outputs. The audio interface includes Mic-in,: line-in and line-out.

2.3 Jumpers and Connectors

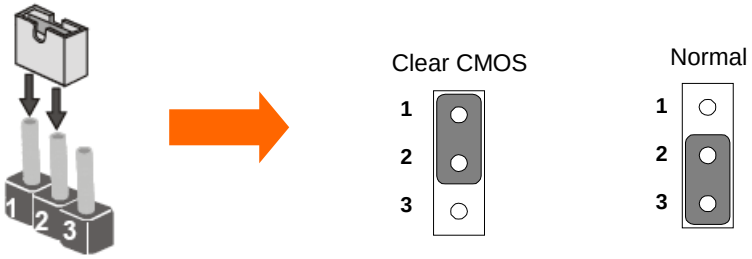
TOP



2.4 Jumper Setting

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

The jumper setting diagram is as below. If a jumper shorts pin 1 and pin 2, the setting diagram is shown as the right one.

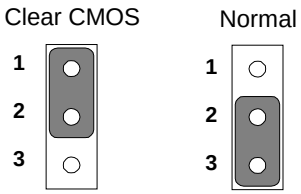


The following tables list the function of each of the board's jumpers.

Label	Function	Note
JP1	Clear CMOS	3x1 header , pitch 2.0mm
JP3	RS232 / RS422 / RS485 Selector	2x3 header , pitch 2.0mm
JP4	RS232 / RS422 / RS485 Selector	3x4 header , pitch 2.0mm
CON9	LVDS VOLTAGE	2x3 header , pitch 2.0mm

2.4.1 JP1: Clear CMOS

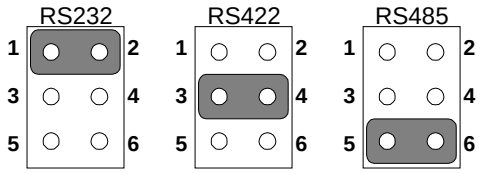
User must make sure the power supply to turn off the power supply before setting Clear CMOS. Users remember to setting jumper back to Normal before turning on the power supply. Default: 2 short 3.



Pin No.	Functions
1 Short 2	Clear CMOS
2 Short 3	Normal

JP3 : COM1 RS232 / RS422 / RS485 Function Selector

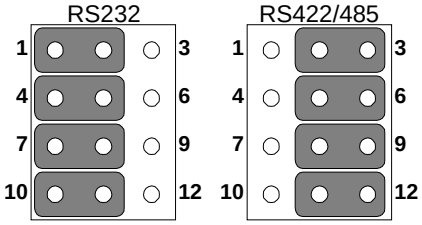
The jumper can be configured to operate COM1 in RS-232/422/485 mode. And the setting must be cooperated with the 2.4.2 settings. Default 1 short 2.



Pin No.	Functions
1 Short 2	RS232
3 Short 4	RS422
5 Short 6	RS485

2.4.2 JP4: RS232 / RS422 / RS485 Selector

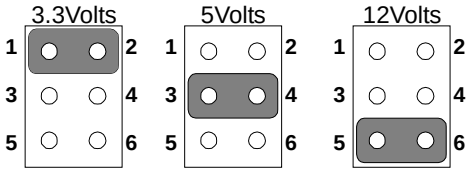
The jumper can be configured to operate COM1 in RS-232/422/485 mode. And the setting must be cooperated with JP3 settings.



RS232	RS422/485
1-2	2-3
4-5	5-6
7-8	8-9
10-11	11-12

2.4.3 CON9: LCD Panel Voltage Select

CON9 can be configured to operate in 3.3Volts / 5Volts / 12Volts mode.



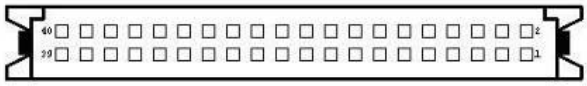
Pin No.	Functions
1 Short 2	3.3Volts Selected
3 Short 4	5Volts Selected
5 Short 6	12Volts Selected

2.5 Connectors and Pin Assignment

The table below lists the function of each of the board's connectors.

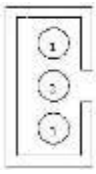
Label	Function	Note
CON7	LVDS LCD Output Connector	DF13-40DP-1.25V
JP7	Digital Panel Backlight Brightness Control	3x1 header, pitch 2.54mm
CON8	Inverter Connecter	7x1 header, pitch 2.54mm
CON3	Serial port COM2	10pin COM port
CON11	Serial port COM5,6	20 Pin COM port
USB	USB PIN HEADER	4x2 Pin Header
FAN1_NB	FAN CONNECTOR	3x1 Pin Header
FAN2_CPU	FAN CONNECTOR	3x1 Pin Header
PANEL1	System Function Connector	5x2 header ,pitch 2.0mm
J4	Front Audio (Right)	1x2 header ,pitch 2.54mm
J5	Front Audio (Left)	1x2 header ,pitch 2.54mm
12V (Yellow)	12V External Power	2x1 header, pitch 2.54mm
5V(Red)	5V External Power	2x1 header, pitch 2.54mm
HDD PWR	5V/12V External Power	4x2 header ,pitch 2.54mm
CON2	Digital I/O	10 pin Digital I/O function
CN2	Mini-PCIE	Half size
CN3	Mini-PCIE	Full size
CN22	SIM card connector	6 pin Header
J2	DVI FFC	18 pin FFC
CN6	HDMI CONNECTOR	19 pin HDMI port
ATX12V	12V DC Connector	2x2 Pin Connecter

2.5.1 CN7: LVDS Connector



Pin No.	SYMBOL	Pin No.	SYMBOL
1	LCDVDD	2	LVDS_TXL0N
3	LCDVDD	4	LVDS_ TXL0P
5	LCDVDD	6	LVDS_ TXL1N
7	GND	8	LVDS_ TXL1P
9	GND	10	LVDS_ TXL2N
11	GND	12	LVDS_ TXL2P
13	GND	14	LVDS_TXLCKN
15	GND	16	LCDS_ TXLCKP
17	GND	18	LVDS_ TXL3N
19	GND	20	LVDS_ TXL3P
21	GND	22	LVDS_TXU0N
23	GND	24	LVDS_ TXU0P
25	GND	26	LVDS_ TXU1N
27	GND	28	LVDS_ TXU1P
29	GND	30	LVDS_ TXU2N
31	GND	32	LVDS_ TXU2P
33	GND	34	LVDS_TXUCKN
35	GND	36	LVDS_TXUCKP
37	GND	38	LVDS_TXU3N
39	GND	40	LVDS_TXU3P

2.5.2 JP7: Digital Panel Backlight Brightness Control

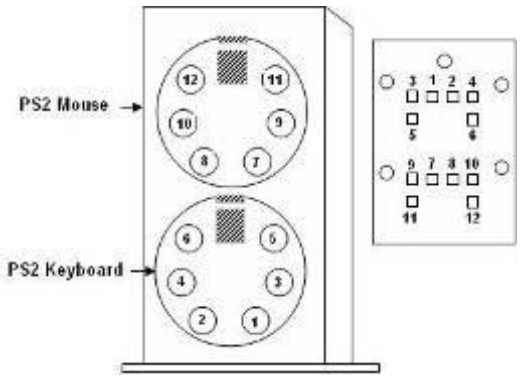


Pin No.	SYMBOL
1	VCC(5V)
2	Black Light Control
3	GND

2.5.3 CON8: Digital Panel Backlight Control

Pin No.	SYMBOL
1	+12V
2	+12V
3	+12V
4	GND
5	Black Light Control
6	GND
7	Black Light EN 5V

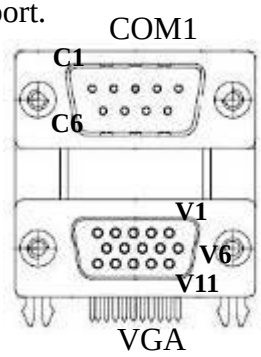
2.5.4 PSKBM1: PS2 Keyboard/Mouse Connector



PS/2 Keyboard		PS/2 Mouse	
Pin No.	SYMBOL	Pin No.	SYMBOL
1	KDATA	7	MDATA
2	NC1	8	NC3
3	Ground	9	Ground
4	VCC	10	VCC
5	KBCLK	15	MSCLK
6	NC2	16	NC4

2.5.5 D-SUB Dual Output

The serial port COM1, which is option for RS232 / RS422 / RS485, is the Winbond I/O serial port.



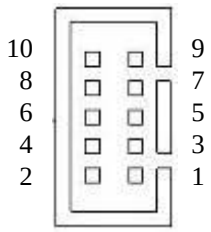
Up: 9(Male)

Down: 15(Female)

Pin No.	SYMBOL	Pin No.	SYMBOL
C1	DCD4/485TXRX-	V1	R
C2	SRD4/485TXRX+	V2	G
C3	STD4/422RX+	V3	B
C4	DTR4/422RX-	V4	NA
C5	GND	V5	GND
C6	NDSRA	V6	GND
C7	NRTSA	V7	GND
C8	NCTSA	V8	GND
C9	NRIA	V9	VCC
		V10	GND
		V11	NA
		V12	DDC_DATA
		V13	CRT_HS
		V14	CRT_VS
		V15	DDC_CLK

2.5.6 CON3: Serial port COM2

The serial port COM2, which is Winbond I/O support, is RS232 only.



Pin	SYMBOL	Pin	SYMBOL
10	GND	9	GND
8	NRI1A	7	NDTR1A
6	NCTS1A	5	NTXD1A
4	NRTS1A	3	NRXD1A
2	NDSR1A	1	NDCD1A

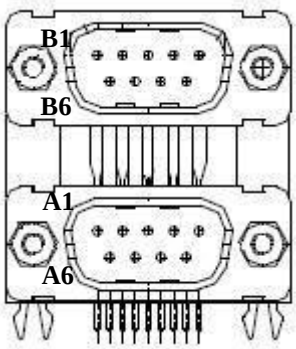
2.5.7 CON11: Serial port COM5、COM6

Pin No.	SYMBOL	Pin No.	SYMBOL
20	GND	19	GND
18	NRI1A	17	NDTR1A
16	NCTS1A	15	NTXD1A
14	NRTS1A	13	NRXD1A
12	NDSR1A	11	NDCD1A
10	GND	9	GND
8	NRIA	7	NDTRA
6	NCTSA	5	NTXDA
4	NRTSA	3	NRXDA
2	NDSRA	1	NDCDA

2.5.8 D-SUB Dual Serial Port

The serial port COM3/4, RS232 only, from A1 to A9 is COM3, and B1 to B9 is COM4, which is supported by Fintek.

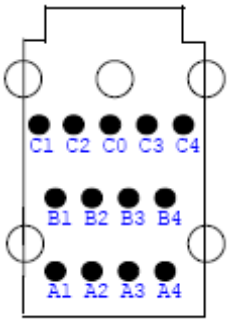
COM4



COM3

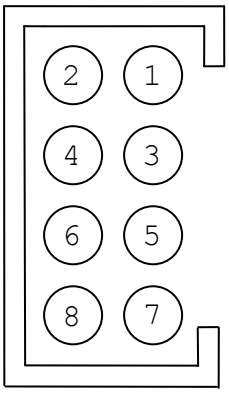
Pin No.	SYMBOL	Pin No.	SYMBOL
A1	FK_NDCD1	B1	FK_NDCD2
A2	FK_NSIN1	B2	FK_NSIN2
A3	FK_NSOUT1	B3	FK_NSOUT2
A4	FK_NDTR1	B4	FK_NDTR2
A5	GND	B5	GND
A6	FK_NDSR1	B6	FK_NDSR2
A7	FK_NRTS1	B7	FK_NRTS2
A8	FK_NCTS1	B8	FK_NCTS2
A9	FK_NRI1	B9	FK_NRI2

2.5.9 AUDIO401: Audio Jack (Pin-header)



Color	Signal
Blue	Line In
Green	Line Out
Pink	Microphone In
Pin-Header	
C0~C4	Line in
B1~B4	Line out
A1~A4	Mic in

2.5.10 USB: USB PIN HEADER

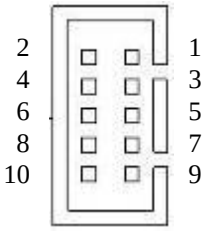


USB1			
Pin	SYMBOL	Pin	SYMBOL
2	USBVCC	1	USBVCC
4	USB_DATA1-	3	USB_DATA0-
6	USB_DATA1+	5	USB_DATA0+
8	GND	7	GND

2.5.11 FAN1_NB/FAN2_CPU: FAN CONNECTOR

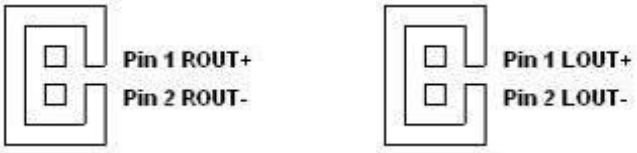
FAN1_NB **FAN2_CPU**

2.5.12 PANEL1: Front Panel System Function Connector



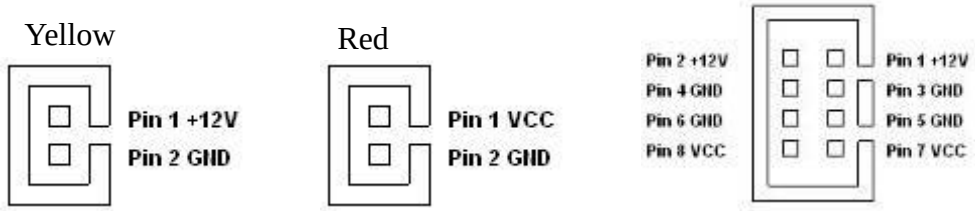
Pin	SYMBOL	Pin	SYMBOL
2	HD_LED+	1	PW_LED+
4	HD_LED-	3	PW_LED-
6	RT_BT1	5	PW_BT1
8	RT_BT2	7	PW_BT2
10	5VSB	9	RSEV

2.5.13 J4/J5: Front Audio



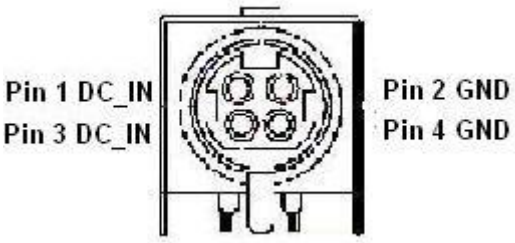
J4 **J5**

2.5.14 5V/12V/HDD PWR: External Power

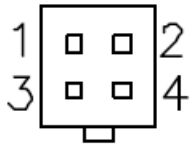


12V 5V HDD PWR

2.5.15 PWIN1: DC Jack (+12V) / Input

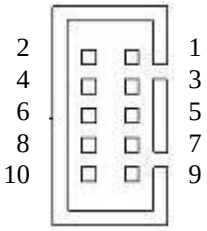


2.5.16 ATX_PWR / Input: 12V DC Connector



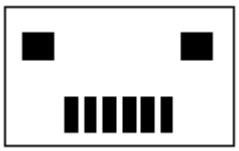
Pin	SYMBOL
1	Ground
2	Ground
3	+12V
4	+12V

2.5.17 : CN2: Digital I/O Connector



Pin	SYMBOL	Pin	SYMBOL
2	Vcc	1	GND
4	Out1	3	Out3
6	Out0	5	Out2
8	IN1	7	IN3
10	IN0	9	IN2

2.5.18 : CN22:SIM card connector



CN22

Pin Number	Signal Name
1	VREG_USIM
2	MSM_USIM_RESET
3	MSM_USIM_CLK
4	GND
5	MSM_USIM_VPP
6	MSM_USIM_DATA

2.5.19 ：CN2: Half Size Mini-PCIE slot

Pin Number	Signal Name	Pin Number	Signal Name
2	VCC3_MINIPCIE1	1	PCIE_WAKE#
4	GND	3	NA
6	+V1.5S	5	NA
8	VREG_USIM	7	CLK_SLOT4_OE#
10	NA	9	GND
12	NA	11	CLK_PCIE_SLOT4_N
14	NA	13	CLK_PCIE_SLOT4_P
16	NA	15	GND
18	GND	17	NA
20	WLAN-RFON2	19	NA
22	BUF_PLT_RST2#	21	GND
24	+V3.3A	23	PCIE_RXN3_SLOT4
26	GND	25	PCIE_RXP3_SLOT4
28	+V1.5S	27	GND
30	SMB_CLK	29	GND
32	SMB_DATA	31	PCIE_TXN3_SLOT4
34	GND	33	PCIE_TXP3_SLOT4
36	USB_PN5	35	GND
38	USB_PP5	37	GND
40	GND	39	VCC3_MINIPCIE1
42	NA	41	VCC3_MINIPCIE1
44	NA	43	GND
46	NA	45	NA
48	NA	47	NA
50	GND	49	NA
52	VCC3_MINIPCIE1	51	NA
m2	GND	m1	GND

2.5.20 ：CN3: Full Size 3.5G Module

Pin Number	Signal Name	Pin Number	Signal Name
2	VCC3_MINIPCIE1	1	PCIE_WAKE#
4	GND	3	NA
6	+V1.5S	5	NA
8	VREG_USIM	7	CLK_SLOT3_OE#
10	MSM_USIM_DATA	9	GND
12	MSM_USIM_CLK	11	CLK_PCIE_SLOT3_N
14	MSM_USIM_RESET	13	CLK_PCIE_SLOT3_P
16	MSM_USIM_VPP	15	GND
18	GND	17	NA
20	WLAN-RFON1	19	NA
22	BUF_PLT_RST2#	21	GND
24	+V3.3A	23	PCIE_RXN3_SLOT3
26	GND	25	PCIE_RXP3_SLOT3
28	+V1.5S	27	GND
30	SMB_CLK	29	GND
32	SMB_DATA	31	PCIE_TXN3_SLOT3
34	GND	33	PCIE_TXP3_SLOT3
36	USB_PN4	35	GND
38	USB_PP4	37	GND
40	GND	39	VCC3_MINIPCIE1
42	NA	41	VCC3_MINIPCIE1
44	NA	43	GND
46	NA	45	NA
48	NA	47	NA
50	GND	49	NA
52	VCC3_MINIPCIE1	51	NA
m2	GND	m1	GND

CHAPTER 3

Graphic Driver Installation

This chapter offers information on the chipset software Installation utility

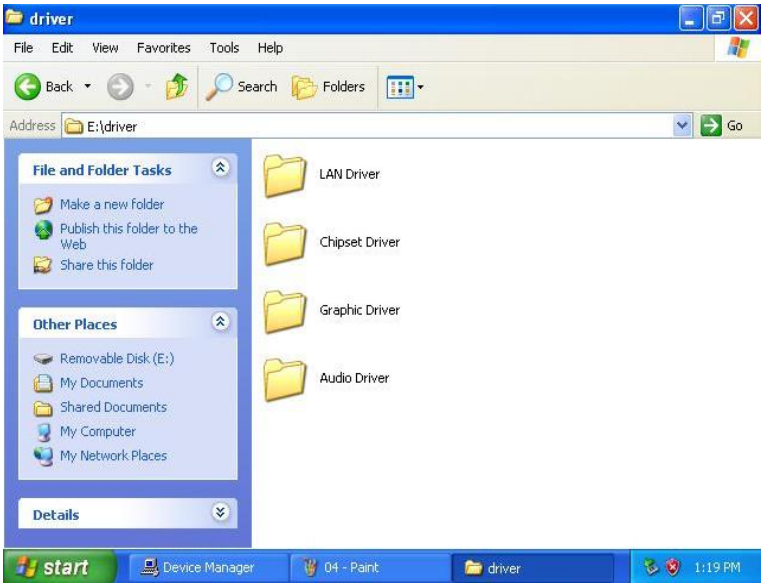
- Installation of Graphic Driver
- Panel Resolution Setting

Chapter 3 Graphic Driver Installation

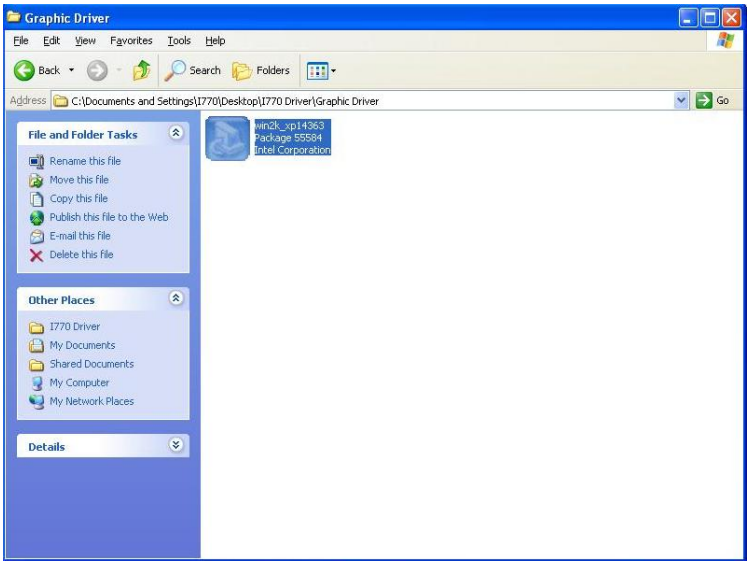
3.1 Graphic Driver Installation

IC70 Motherboard is equipped with Intel GM45 / ICH9M-E Companion Device. The Intel Graphic Drivers should be installed first, and it will enable “Video Controller (VGA compatible). Follow the instructions below to complete the installation. You will quickly complete the installation.

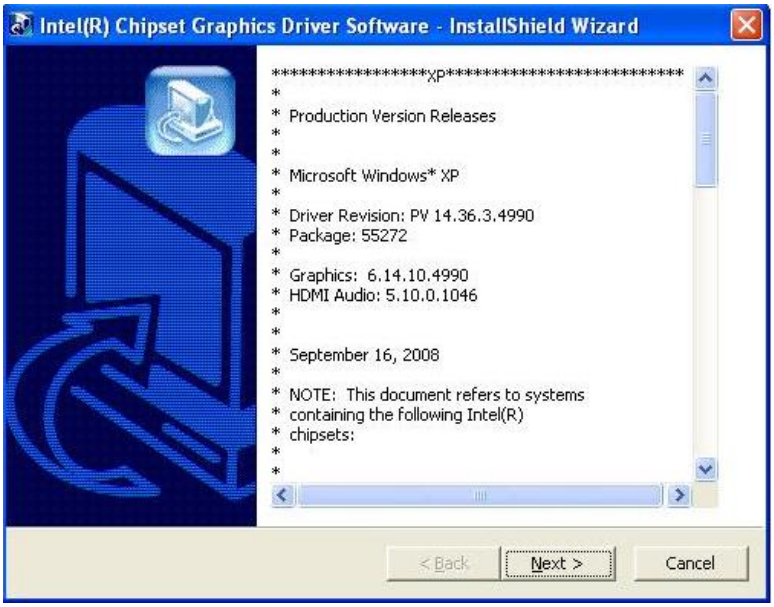
Step.1. Insert the CD that comes with the Motherboard. Open the file document “Graphic Driver “.



Step.2. Click on “winxp_14428” to execute the setup.

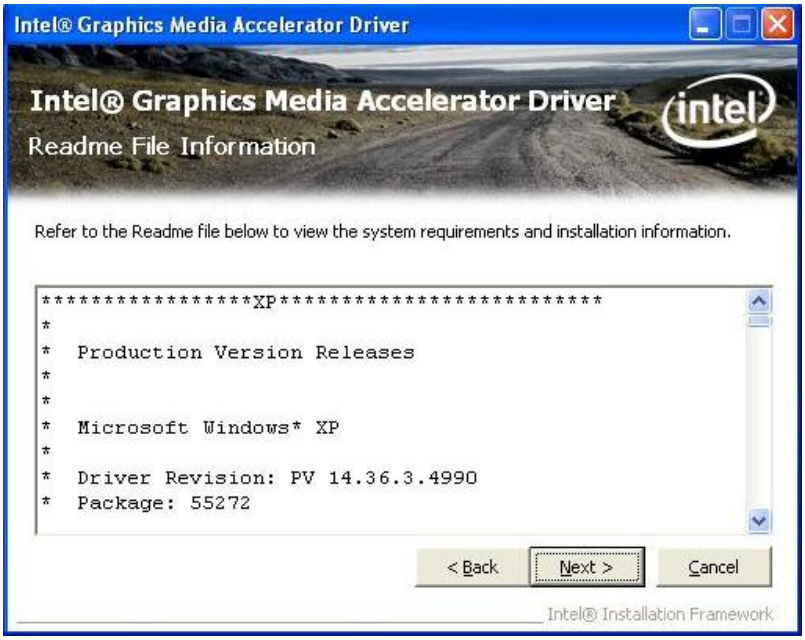


Step.3. Click on “Next “ to install Driver.



Step.4. Click on “Next “ to install Driver.

Step.5. Click on “Yes “ to agree License.



Step.7. Click on “Yes, I want to restart this computer now“ to go on.

CHAPTER 4

Chipset Driver Installation

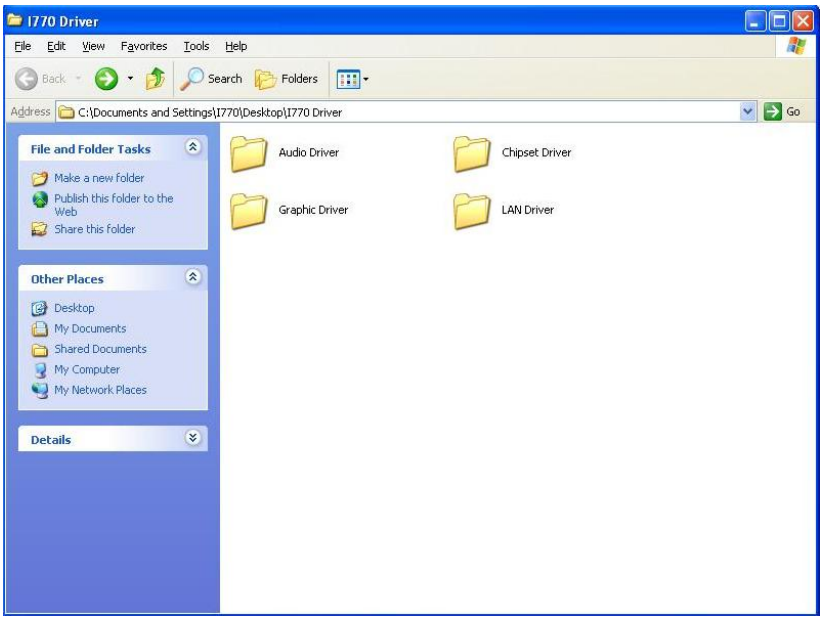
This chapter offers information on the chipset software Installation utility

- Installation of Chipset Driver
- Further information

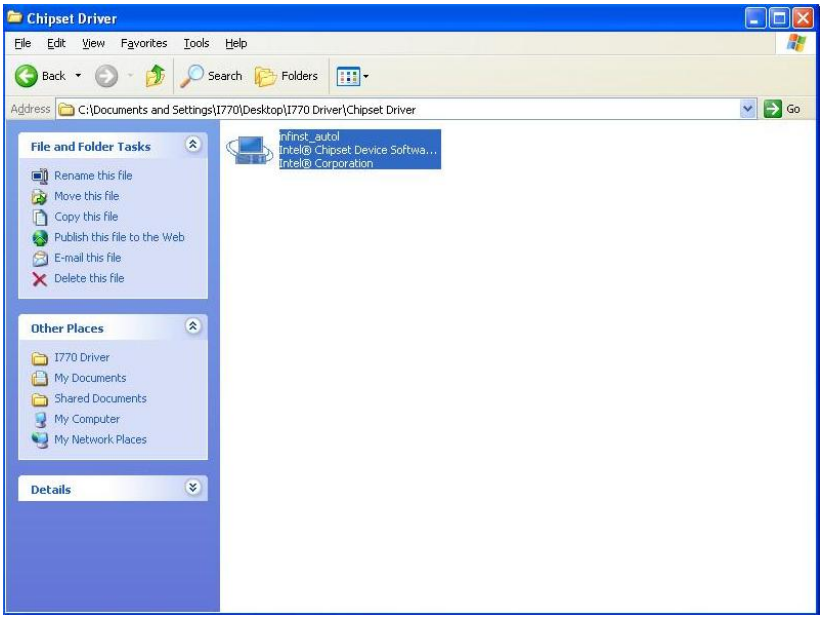
Chapter 4 Chipset Driver Installation

4.1 Chipset Driver Installation

Setp.1. Insert the CD that comes with the motherboard. Open the file document “Chipset Driver”.



Setp.2. Click on “Setup“ to install driver.



Setp.3. Click on “Next“ to install driver.

Setp.4. Click on “Yes “ to agree License

Setp.5. Click on “Next“ to install driver.

Step.7. Click on “Yes, I want to restart this computer now“ to go on.

CHAPTER 5

Ethernet Driver Installation

This chapter offers information on the Ethernet software installation utility.
Sections include:

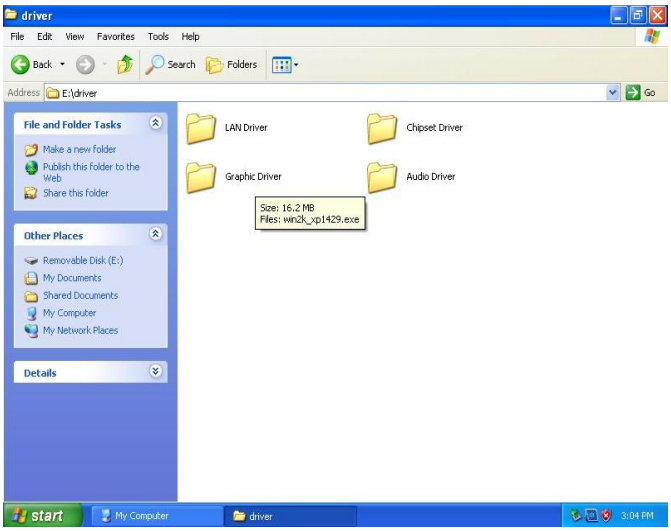
- Introduction
- Installation of Ethernet Driver

Chapter 5 Ethernet Driver Installation

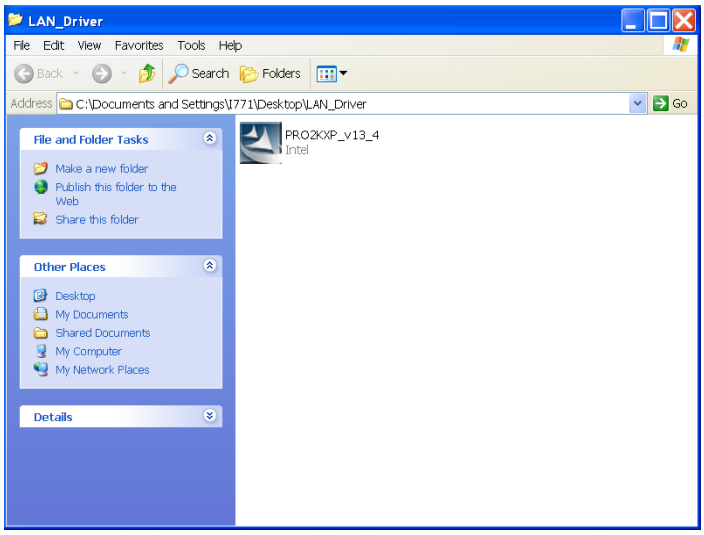
5.1 Installation of Ethernet Driver

The Users must make sure which operating system you are using in the IC70 Motherboard before installing the Ethernet drivers. Follow the steps below to complete the installation of the Broadcom BCM57780 LAN drivers. You will quickly complete the installation.

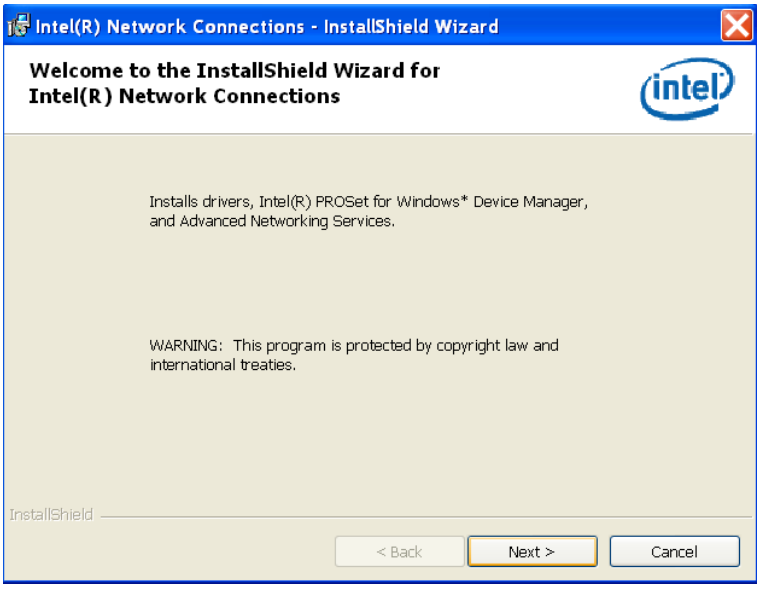
Step.1. Insert the CD that comes with the motherboard. Open the file document “LAN Driver”.



Step.2 Click on “Setup” to execute the setup.

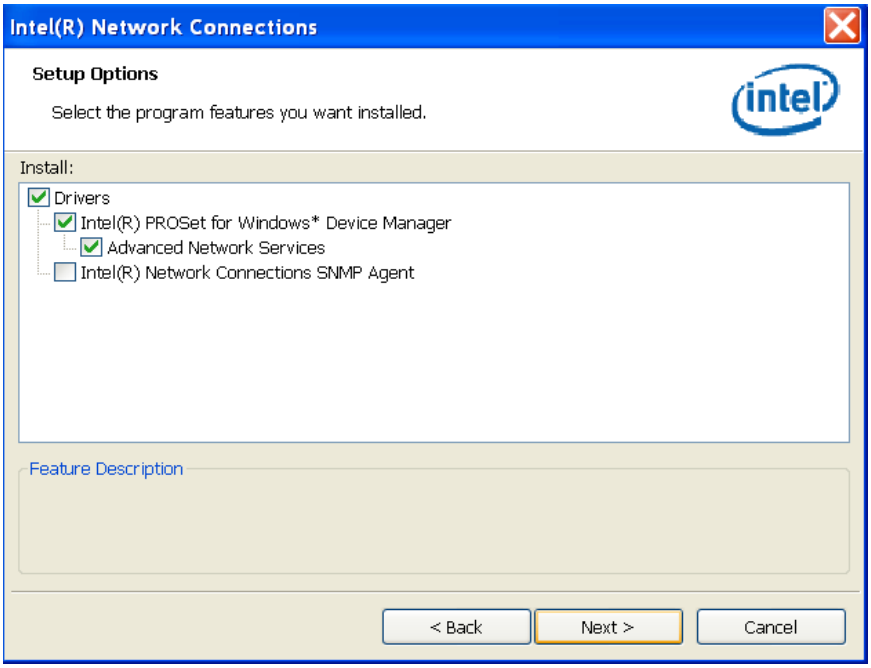


Step.3. Click on “Next“ to install driver.

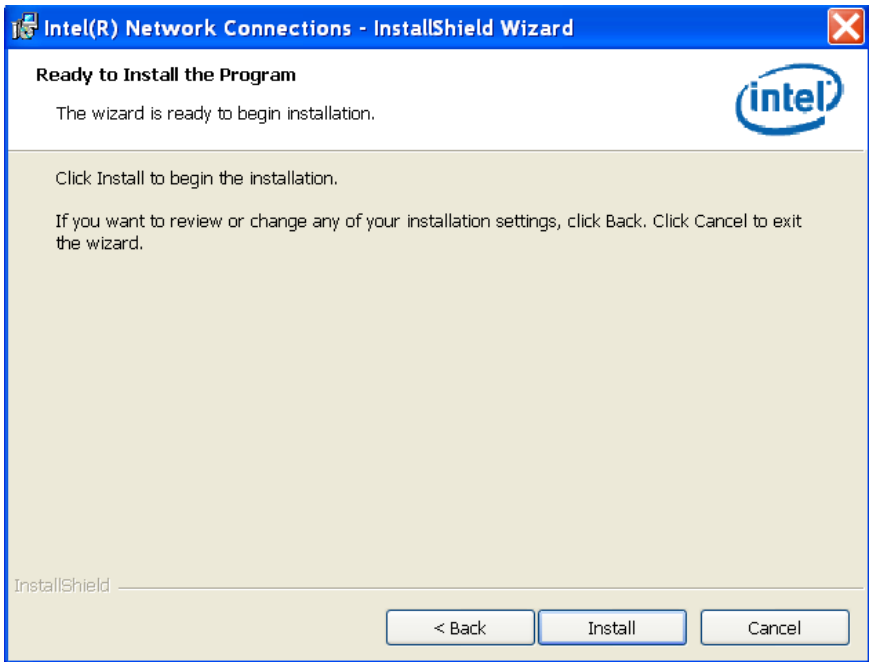


Step.4. Click on “I accept the terms in the license agreement.”

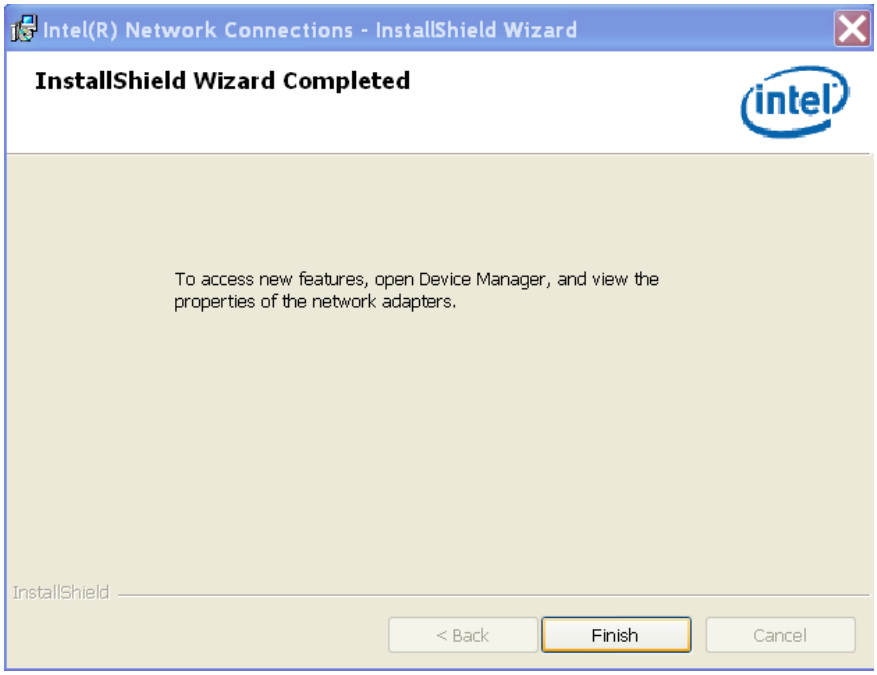
Setp.5. Click on “Advanced Network Services“ and go on.



Setp.6. Click on “Next“ to install driver.



Setp.7. Click on “Finish“.



CHAPTER 6

Audio Driver Installation

This chapter offers information on the Audio software installation utility.

Sections include:

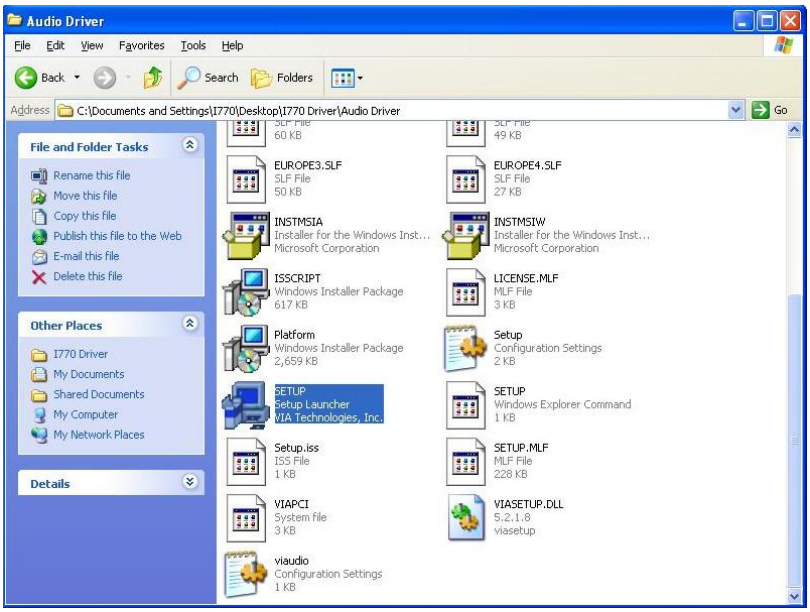
- Introduction
- Installation of Audio Driver

Chapter 6 Audio Driver Installation

6.1 Installation of Audio Driver

The users must make sure which operating system you are using in the IC70 Motherboard before installing the Audio drivers. Follow the steps below to complete the installation of the VIA VT1708B Audio drivers. You will quickly complete the installation.

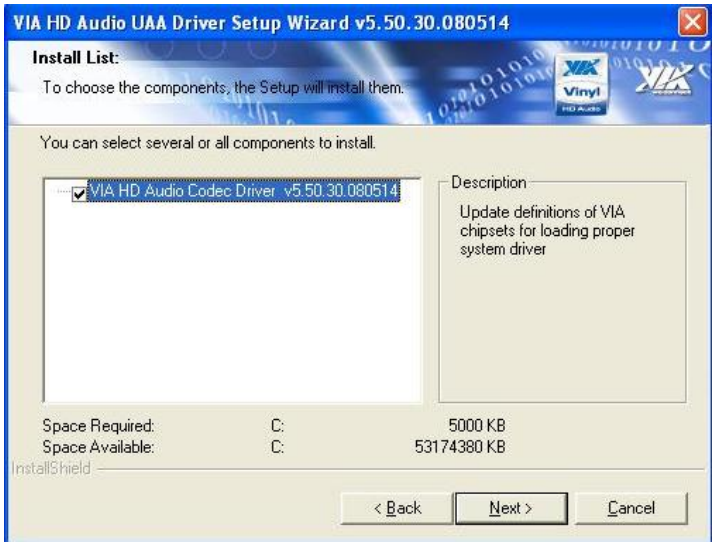
Step.1. Insert the CD that comes with the motherboard. Open the file “Audio driver” and click on “Setup” to execute the setup.



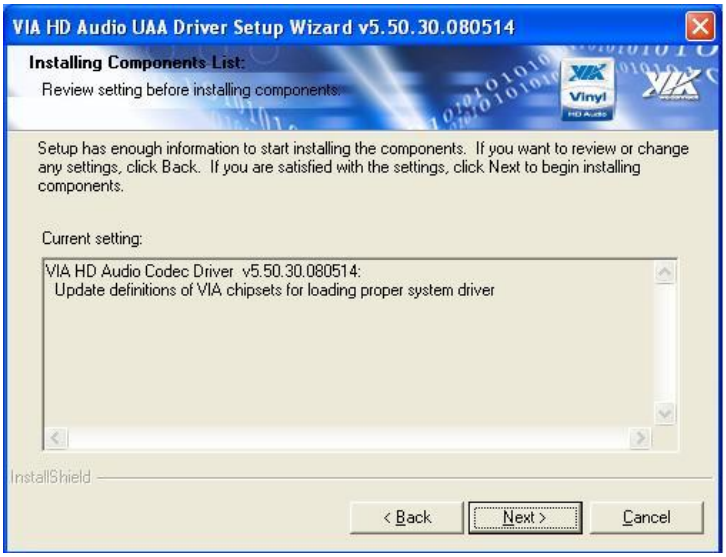
Step.2. Click on “Next“ to install driver.

Step.3. Click on “Yes “ to agree License

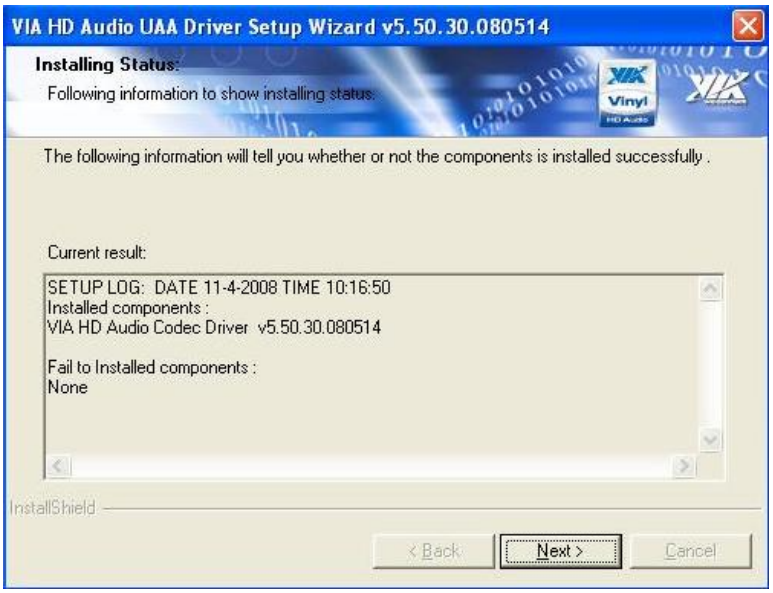
Step.4. Click on “Next“ to install driver.



Step.5. Click on “Next“ to install driver.

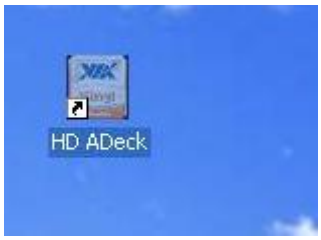


Step.6. Click on “Next“ to install driver.



Step.7 Click on “Yes, I want to restart this computer now“ to go on.

Step.9 After restart computer, cliick on “HD ADeck “ to set up Line in/Mic in.



Step.10 Select ” Analog to the Line out “ and click “ Next page”

Step.11 Select ” Analog to the Line out “ and move the bar.

CHAPTER 7

Fintek COM Port Driver Installation

This chapter describes the step by step method to install the Fintek COM port driver.

STEP 1.If the system is WIN7 please first do close UAC.(Refer following “Disabling

User Account

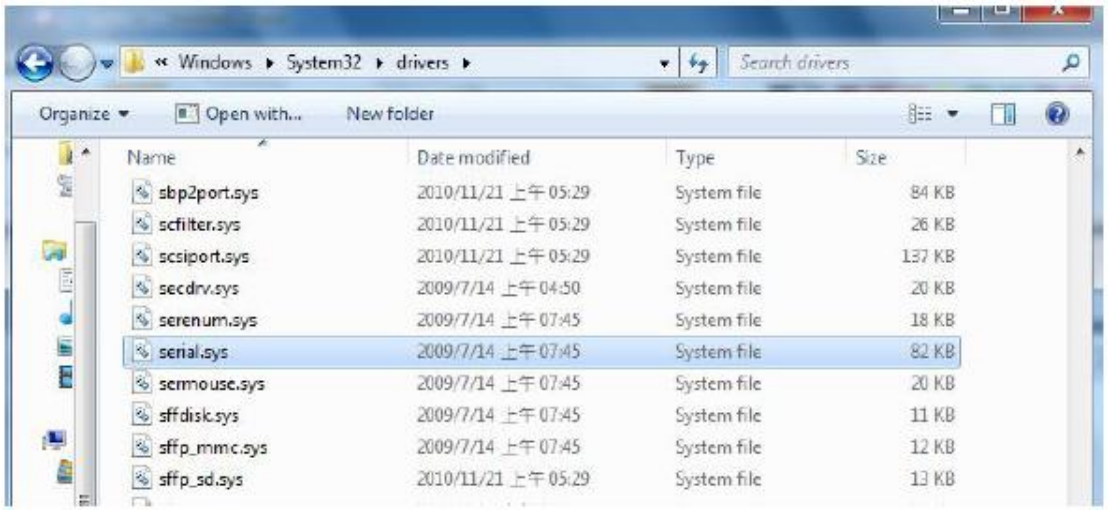
Control (UAC) in Windows 7”)

STEP 2.Extract the Patch_0408.zip to a folder.

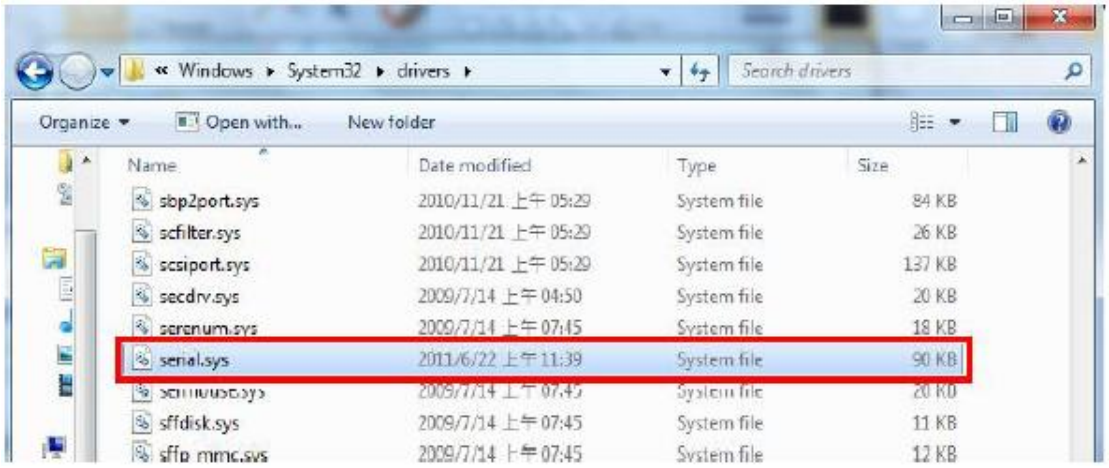
STEP 3.Double-click batch file(patch.bat) will install driver.

STEP 4.Check driver install success.

Before the update or update fail.



After the update and update success.



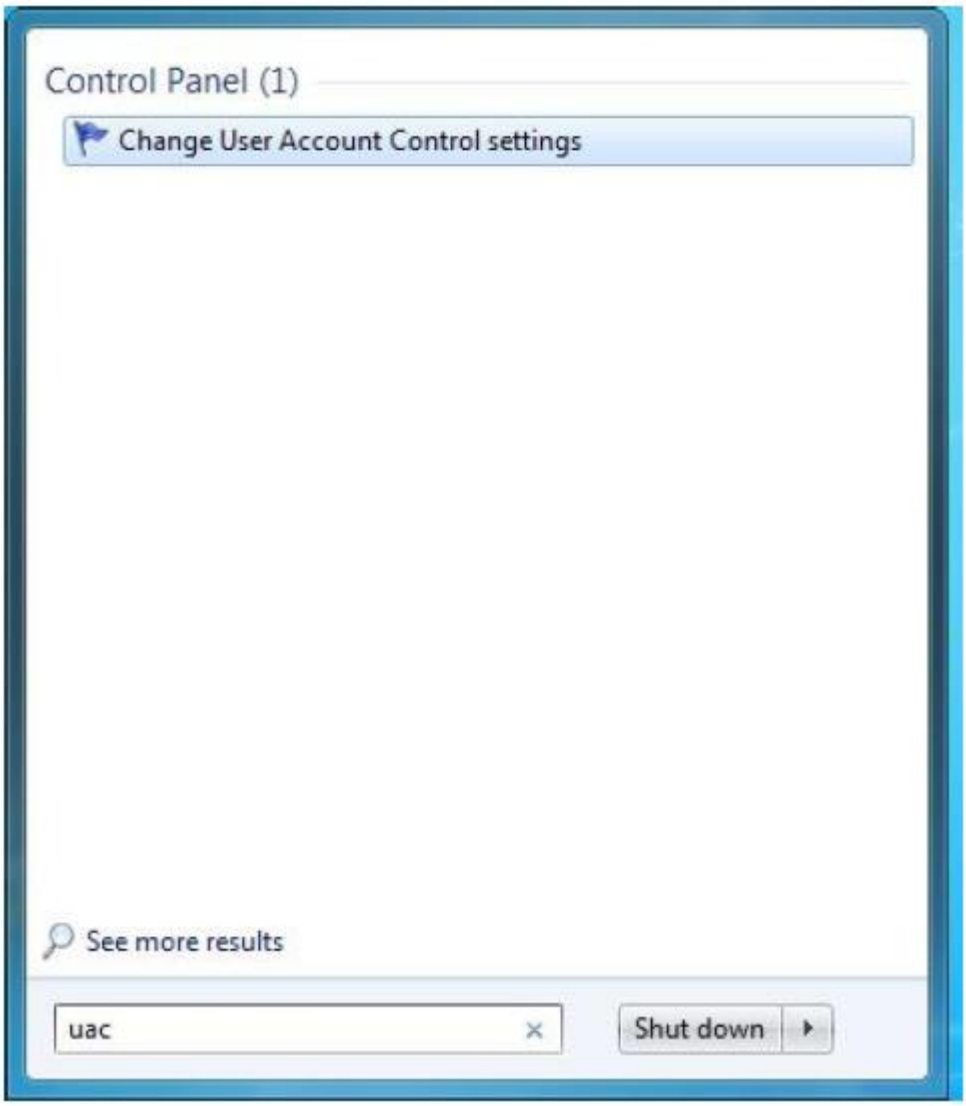
STEP 5.You will need to restart your computer for driver install success.

Type in this command from the Run menu:

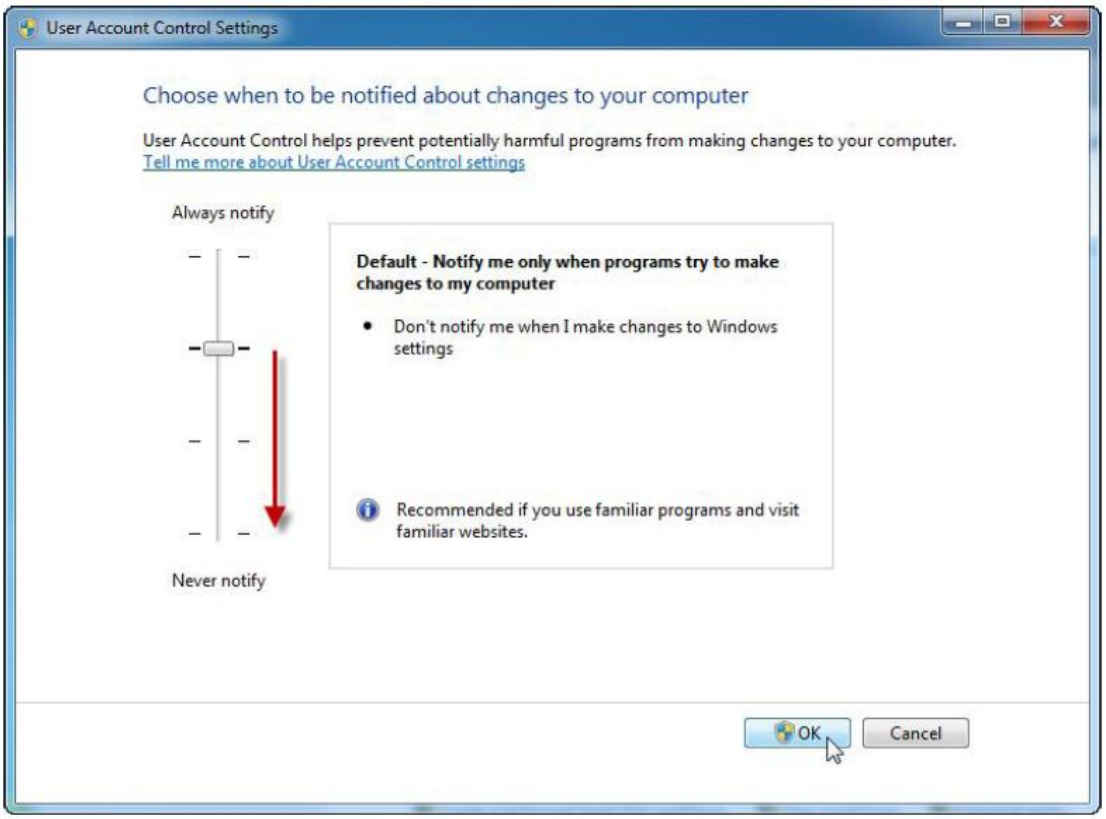
C:\Windows\System32\UserAccountControlSettings.exe

or

uac



To turn off UAC, move the slider to the Never notify position, and then click OK. If you're prompted
for an administrator password or confirmation, type the password or provide confirmation.



To turn UAC back on, move the slider to choose when you want to be notified, and then click OK. If
you're prompted for an administrator password or confirmation, type the password or provide
confirmation.
You will need to restart your computer for UAC to be turned off.

CHAPTER 8

AMI BIOS Installation

This chapter describes the different settings available in the AMI BIOS that comes with the board. This chapter offers information on the Award BIOS installation utility. Sections include:

- BIOS Introduction
- BIOS Setup
- Standard CMOS Setup
- Advanced BIOS Features
- Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PC Health Status
- Load Fail-Safe Defaults
- Load Optimized Defaults
- Set Supervisor/User Password
- Save & Exit Setup
- Exit Without Saving

Chapter 7 AMI BIOS SETUP

7.1 Starting Setup

Your computer comes with a hardware configuration program called BIOS Setup that allows you to view and set system parameters.

The BIOS (Basic Input / Output System) is a layer of software, called 'firmware', that translates instructions from software (such as the operating system) into instructions that the computer hardware can understand. The BIOS settings also identify installed devices and establish special features.

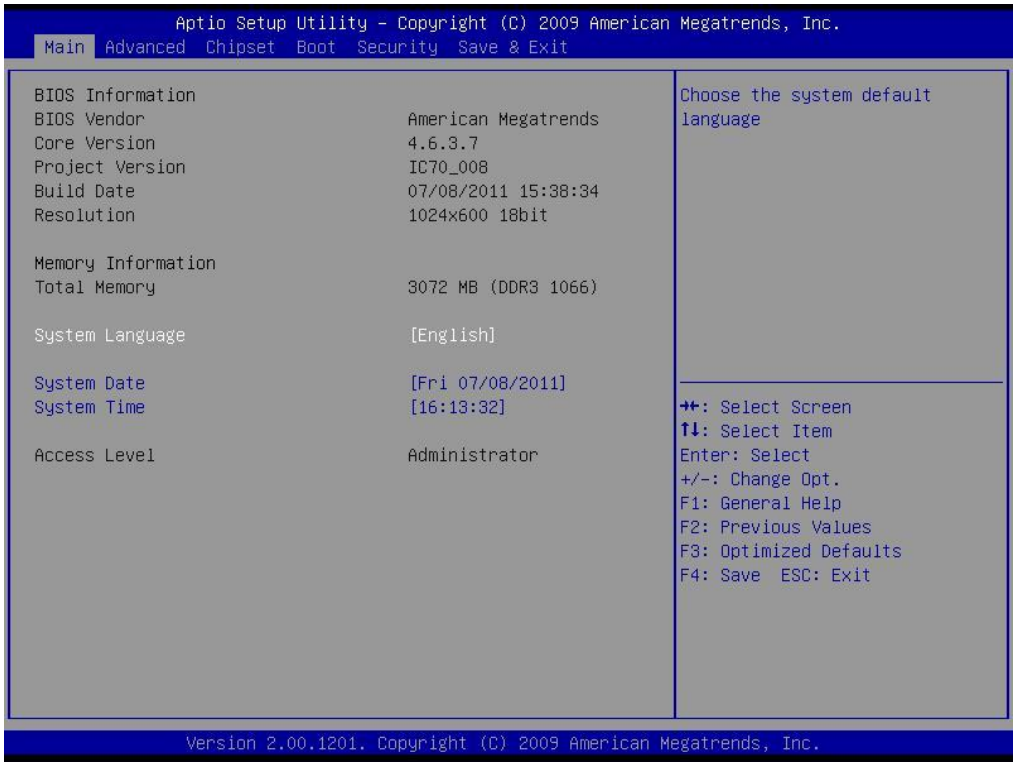
➢ ENTERING BIOS SETUP

You can access the BIOS program just after you turn on your computer. Just press the DEL key when the following prompt appears:

Press <DEL> to enter Setup.

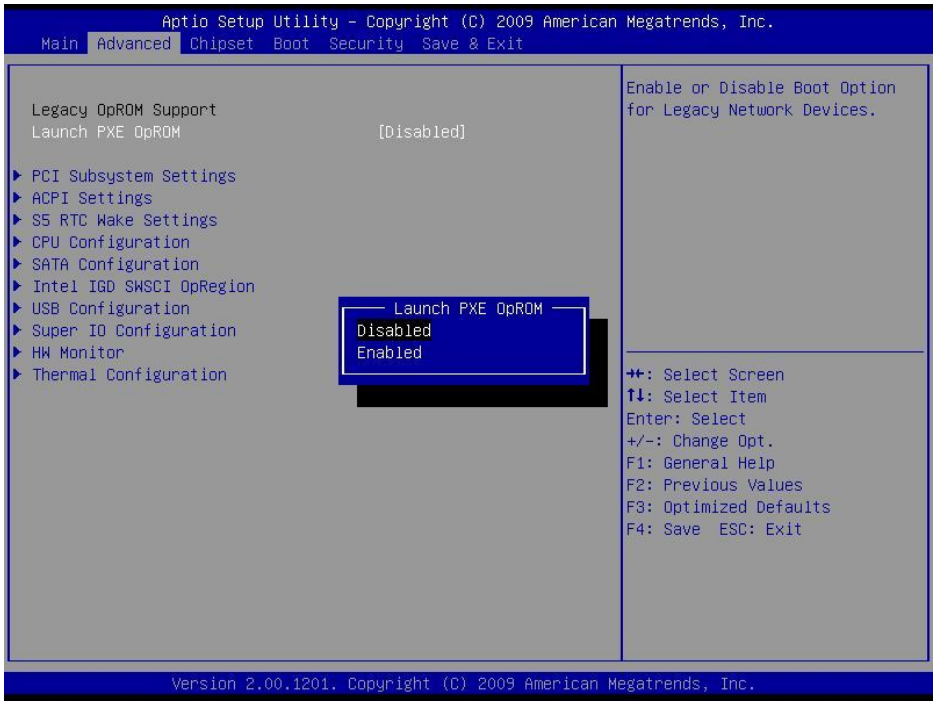
When you press <DEL> to enter BIOS Setup, the system interrupts the Power-On Self-Test (POST).

When you first enter the BIOS Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.



The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured; options in blue can be. The right frame displays the key leg- end.
Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.

7.3 Advanced Setting



➢ Legacy OpROM

SETTING	DESCRIPTION
Disabled	Use this setting to ignore all PXE Option ROMs.
Enabled	Use this setting to load PXE Option ROMs. To limit the PXE support to particular devices, use the function Use device for PXE.

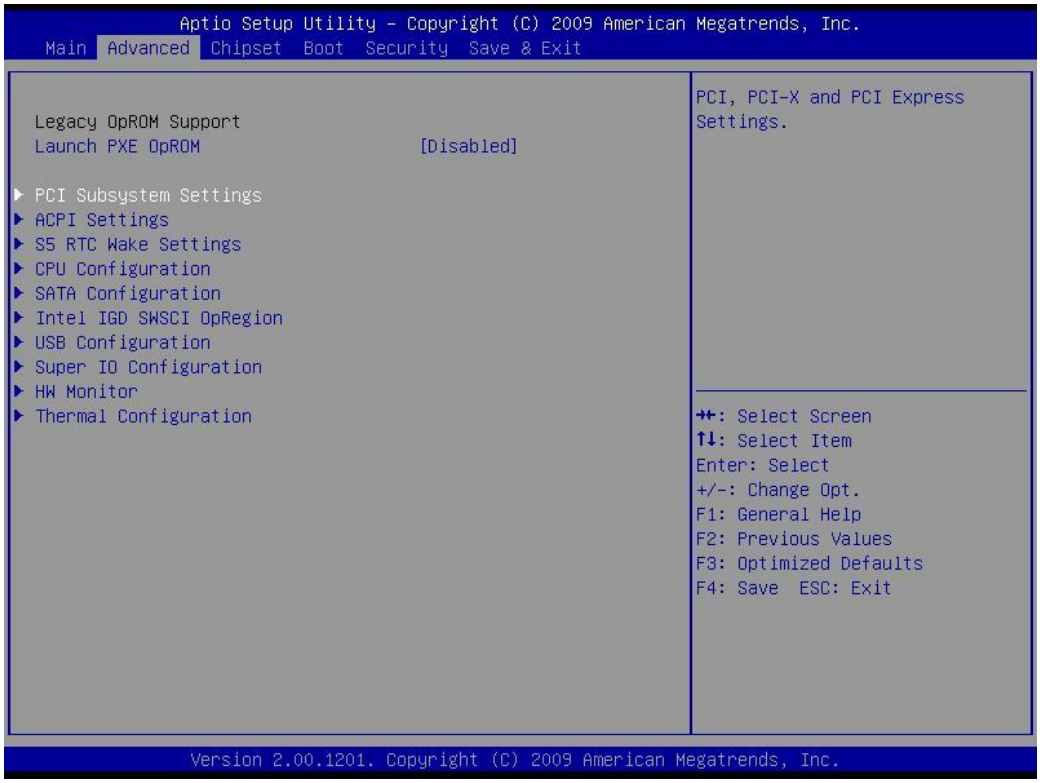
Default: Disabled

➢ Launch Storage OpROM

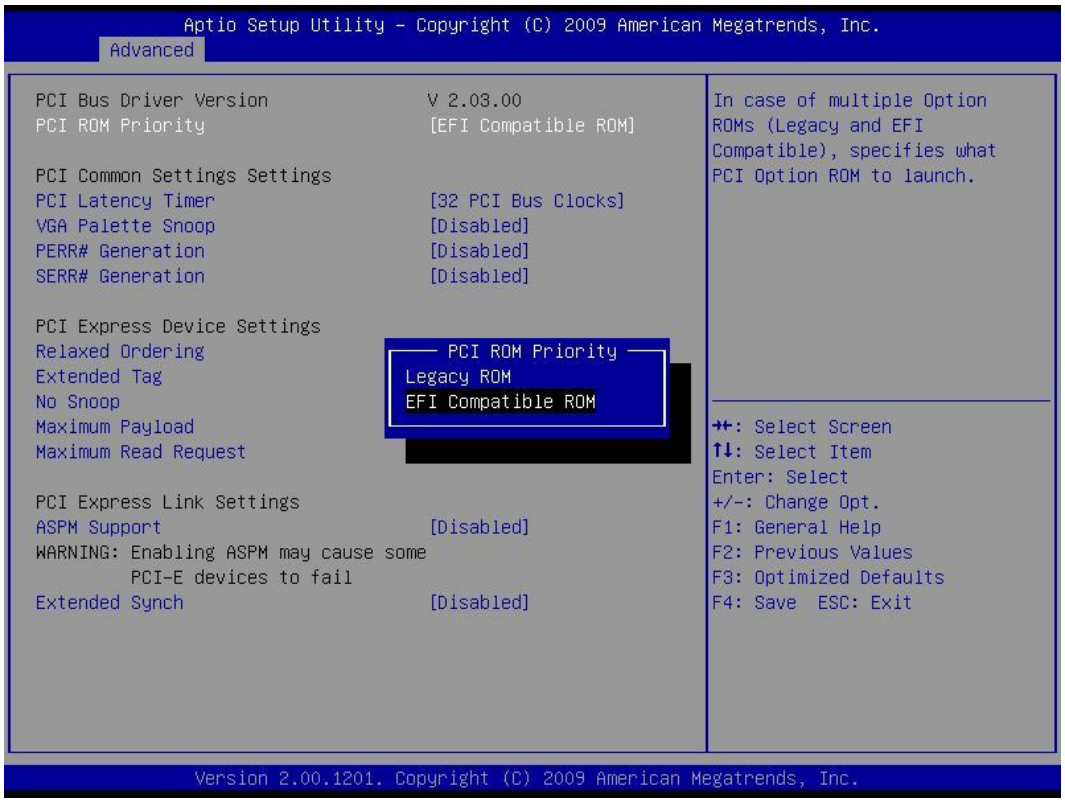
SETTING	DESCRIPTION
Disabled	Use this setting to ignore all PXE Option ROMs.
Enabled	Use this setting to specify that legacy PCI option ROMs for PCI storage devices are to be loaded and executed, if found. Typical examples of PCI storage devices include SCSI or similar devices.

Default: Enabled

➢ PCI Subsystem Settings



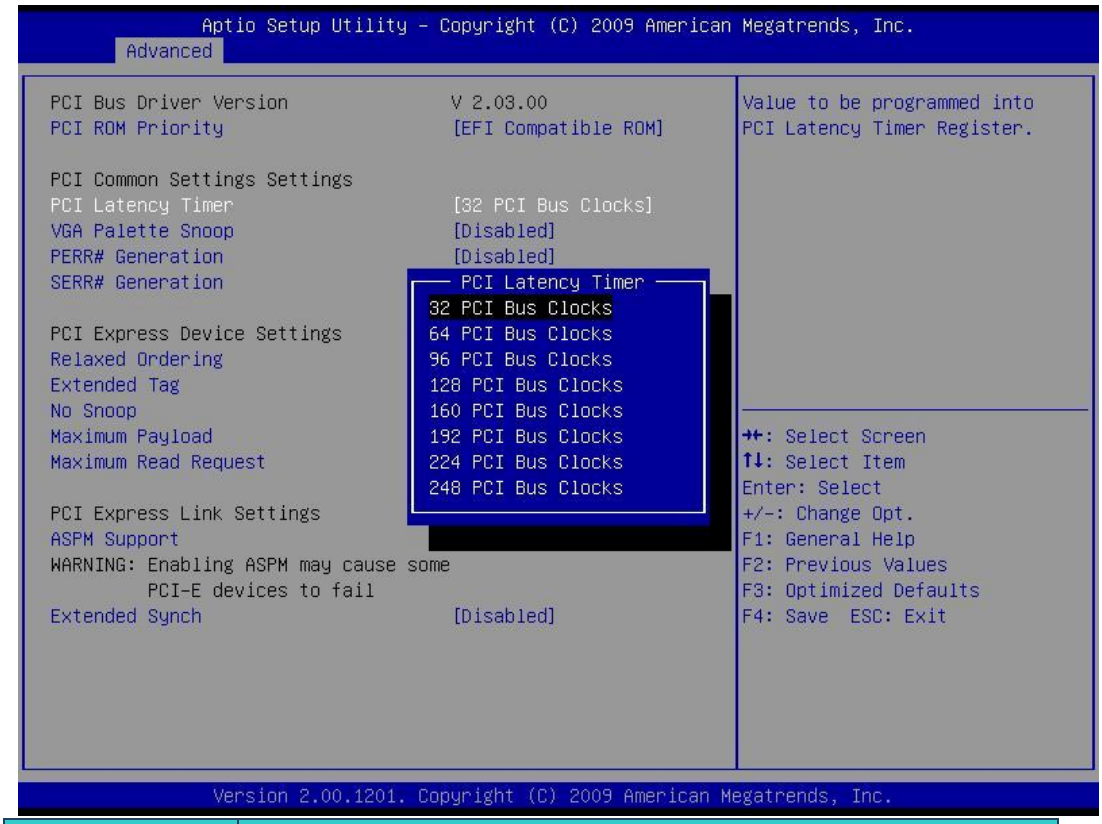
PCI ROM Priority



Selects the PCI Option ROM to launch in case Multiple Option ROMs (**Legacy ROM** and **EFI Compatible ROM**) are present.

PCI Latency Timer

Use this function to select the number of PCI bus clocks to be used for the PCI latency timer.

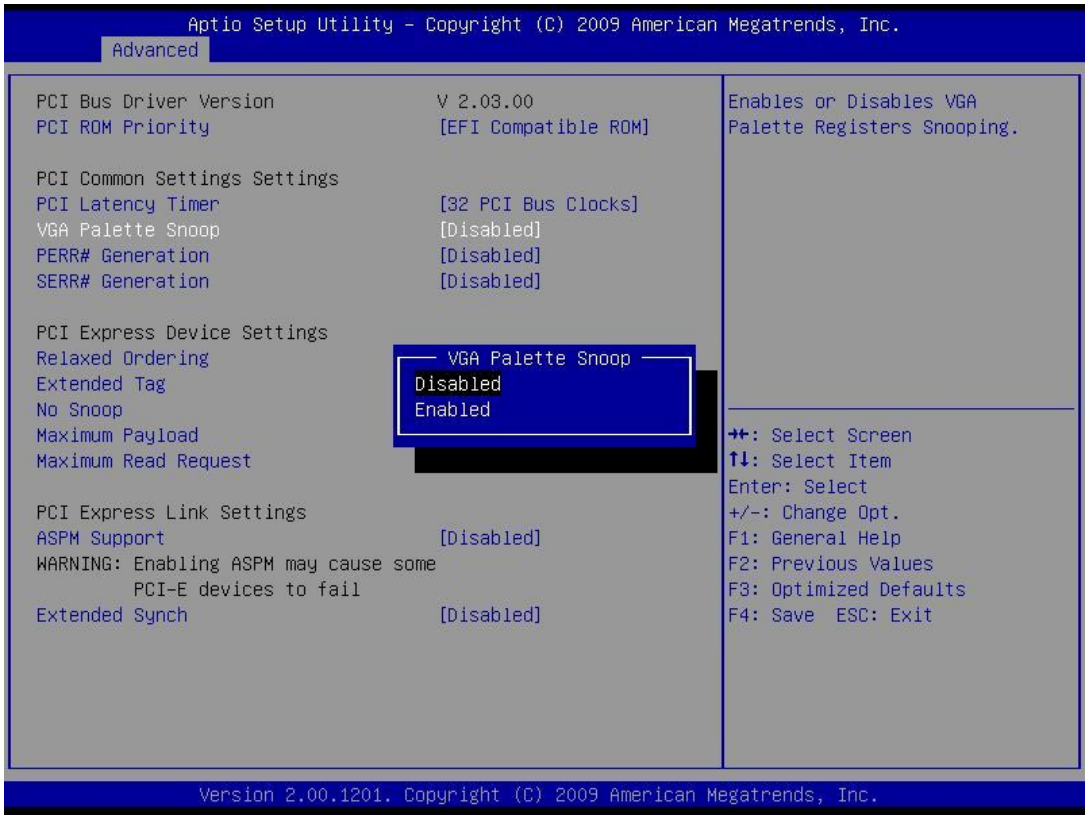


SETTING	DESCRIPTION
32 PCI Bus Clocks	Use this setting to program the PCI latency timer to 32 PCI bus clocks.
64 PCI Bus Clocks	Use this setting to program the PCI latency timer to 64 PCI bus clocks.
96 PCI Bus Clocks	Use this setting to program the PCI latency timer to 96 PCI bus clocks.
128 PCI Bus Clocks	Use this setting to program the PCI latency timer to 128 PCI bus clocks.
160 PCI Bus Clocks	Use this setting to program the PCI latency timer to 160 PCI bus clocks.
192 PCI Bus Clocks	Use this setting to program the PCI latency timer to 192 PCI bus clocks.
224 PCI Bus Clocks	Use this setting to program the PCI latency timer to 224 PCI bus clocks.
248 PCI Bus Clocks	Use this setting to program the PCI latency timer to 248 PCI bus clocks.

Default: 32 PCI Bus Clocks

VGA Palette Snoop

VGA Palette Snoop: This filed controls the ability of a primary PCI VGA controller to share a common palette (when a snoop write cycles) with an ISA video card.



Enables or Disables VGA Palette Registers Snooping.

PERR# Generation

Enables or Disables PCI Device to Generate PERR#.

SERR# Generation

Enables or Disables PCI Device to Generate SERR#.

Relaxed Ordering

Enables or Disables PCI Express Device Relaxed Ordering.

Extended Tag

If ENABLED allows Device to use 8-bit Tag field as a requester.

No Snoop

Enables or Disables PCI Express Device No Snoop option.

Maximum Payload

Set Maximum Payload of PCI Express Device or allow System BIOS to select the value.

Maximum Read Request

Launches (Enabled/Disabled) the boot option for legacy network devices.

ASPM Support

Set the ASPM Level:

Force L0 – Force all links to L0 State

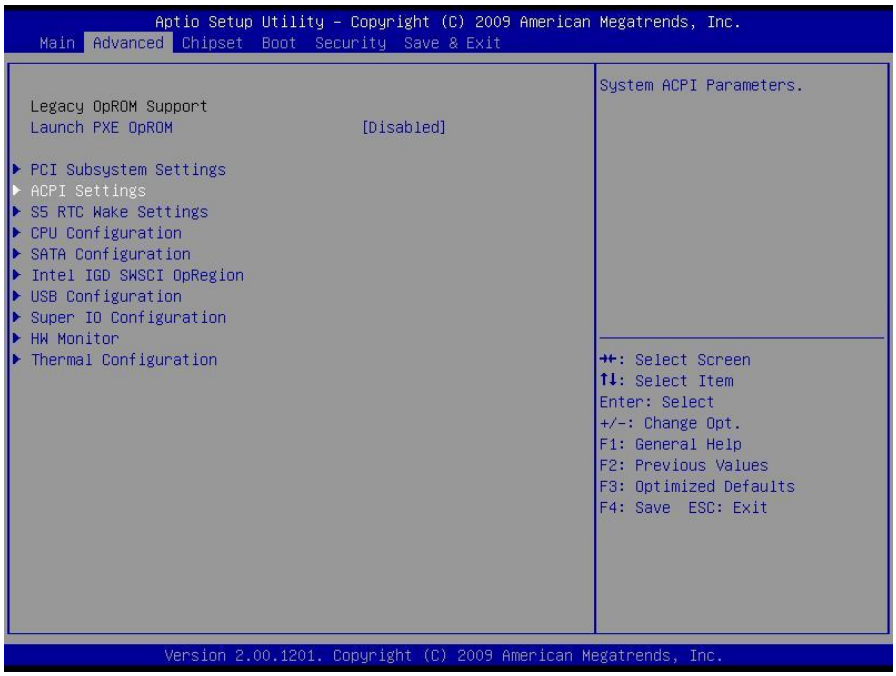
AUTO – BIOS auto configure

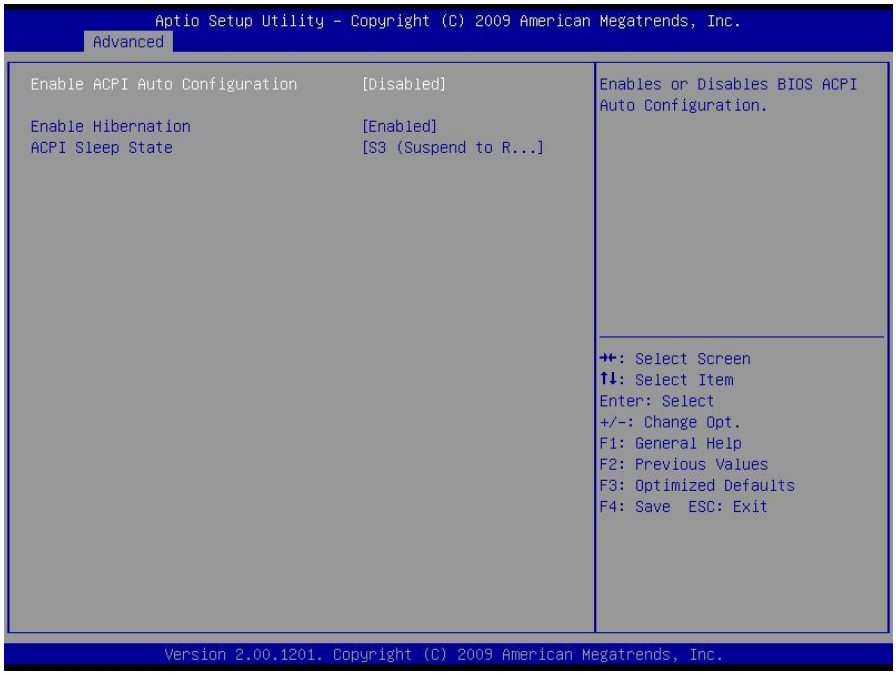
DISABLE – Disables ASPM

Extended Synch

If ENABLED allows generation of Extended Synchronization patterns.

➢ ACPI Settings





Enabled ACPI Auto Configuration

Enables or Disables BIOS ACPI Auto Configuration.

Enable Hibernation

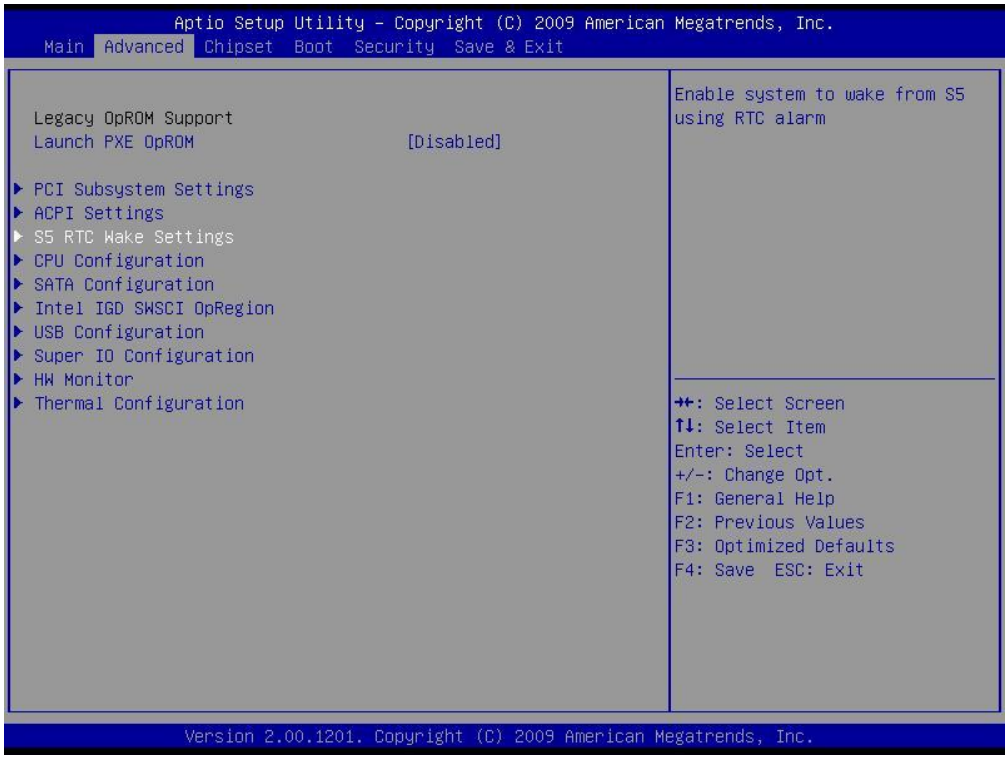
Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

ACPI Sleep State

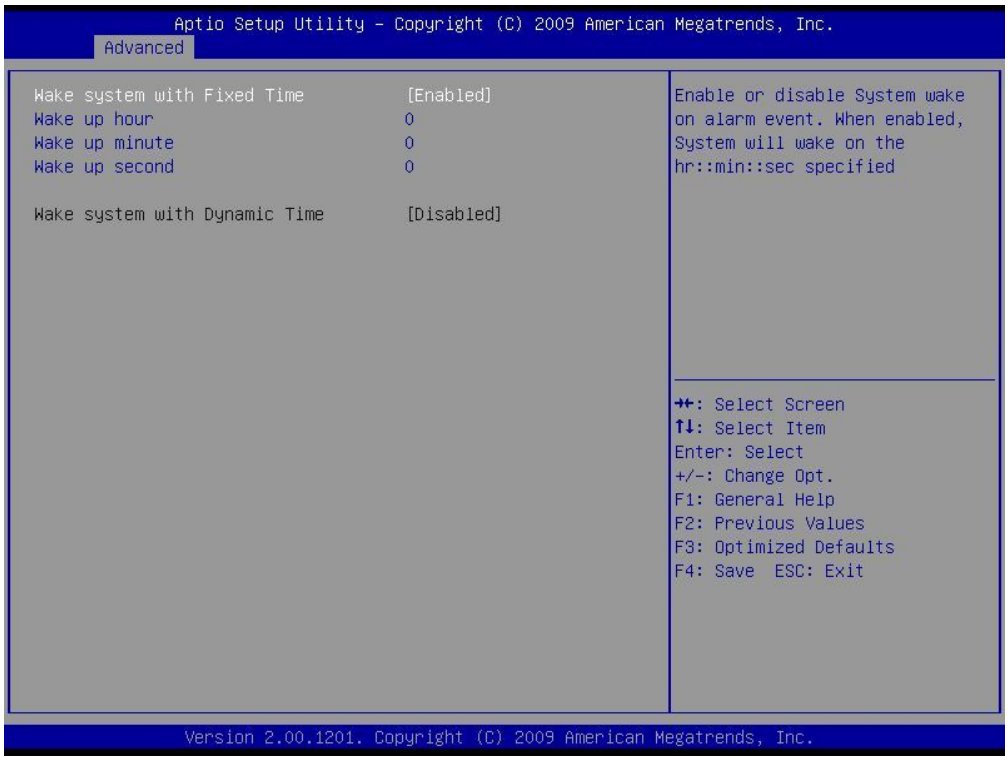
Select the highest ACPI sleep state the system will enter, when the SUSPEND button is pressed.

➢ S5 RTC Wake Settings

This function defines the RTC wake-up settings to allow the system to wake up from the S5 (soft off) state.



This screen provides functions for specifying the S5 RTC Wake Settings.



Wake System with Fixed Time

This function allows the system to wake up from S5 state at a specified time.

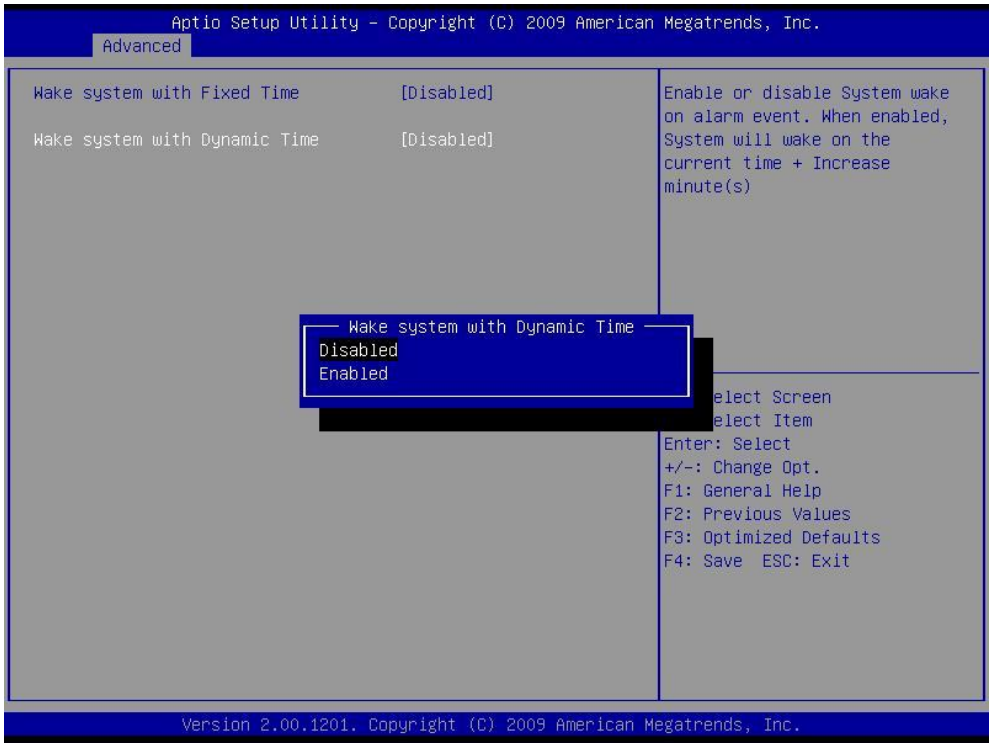
Wake-Up Hour, Wake-Up Minute, Wake-Up Second

This function is used to specify the hour (0-23), the minute (0-59) and the second (0-59) when the system is to wake up from S5 state.

Note: This function is available only when the function “Wake System with Fixed Time” is set to Enabled.

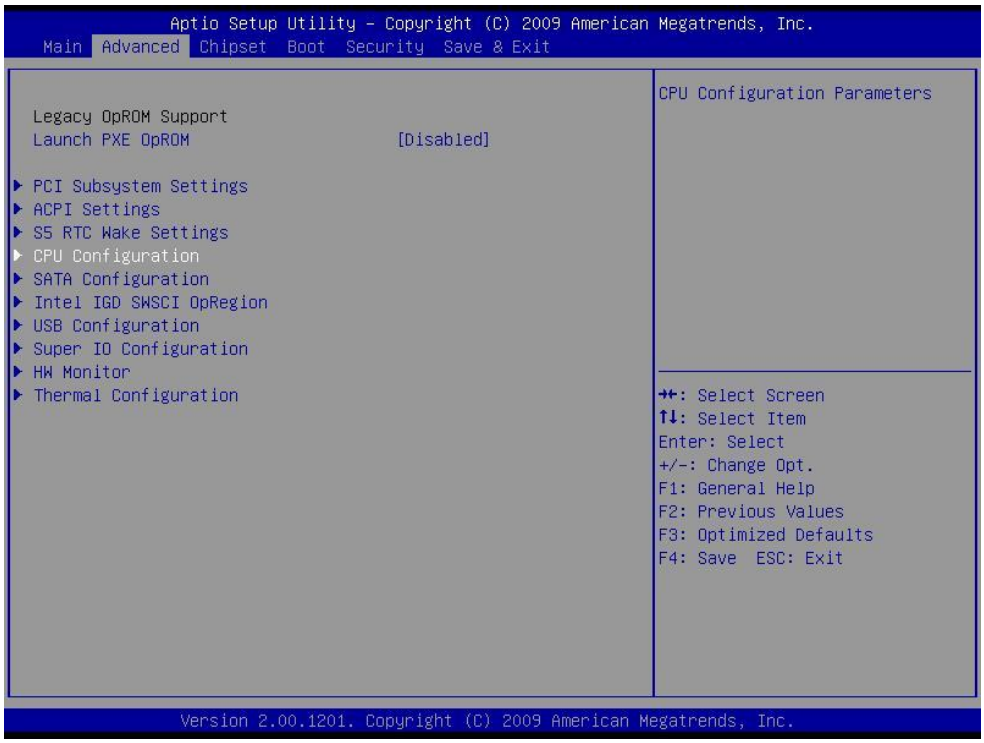
Wake System with Dynamic Time

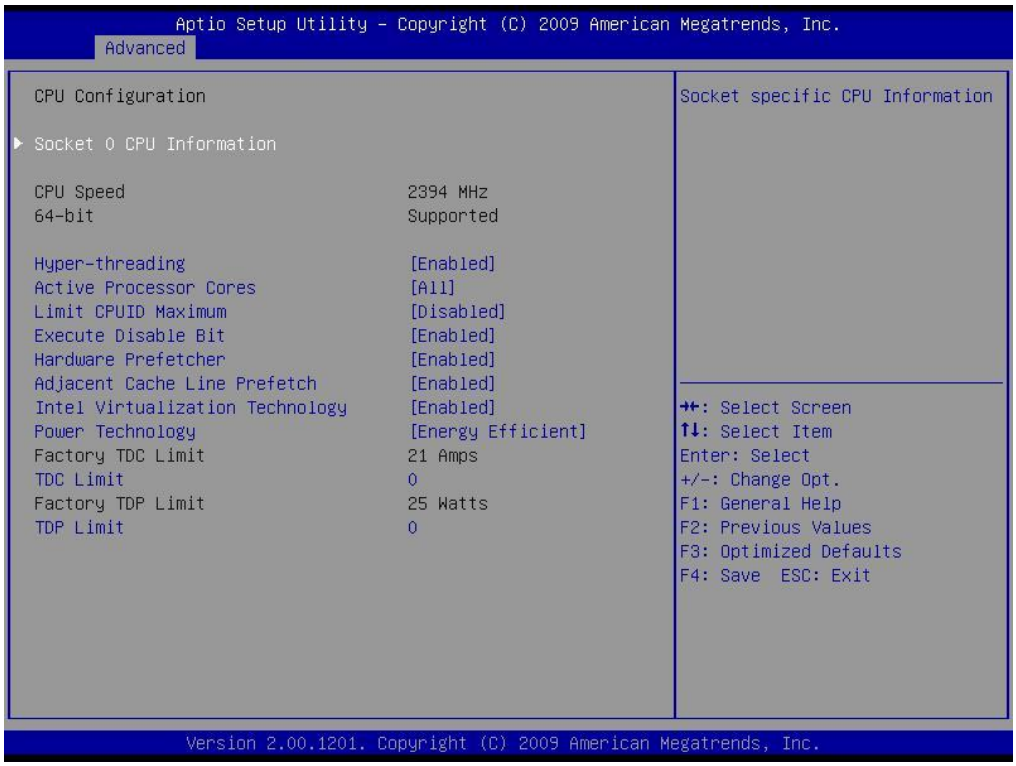
This function is intended for debugging purposes only.



CPU Configuration

This section shows the CPU configuration parameters.





Hyper-threading

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.

Active Processor Cores

This field is used to enter the number of cores to enable in each processor package.

Limit CPUID Maximum

Disabled for Windows XP.

Execute Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS

(Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)

Hardware Prefetcher

Turns on/off the MLC streamer prefetcher.

Adjacent Cache Line Prefetch

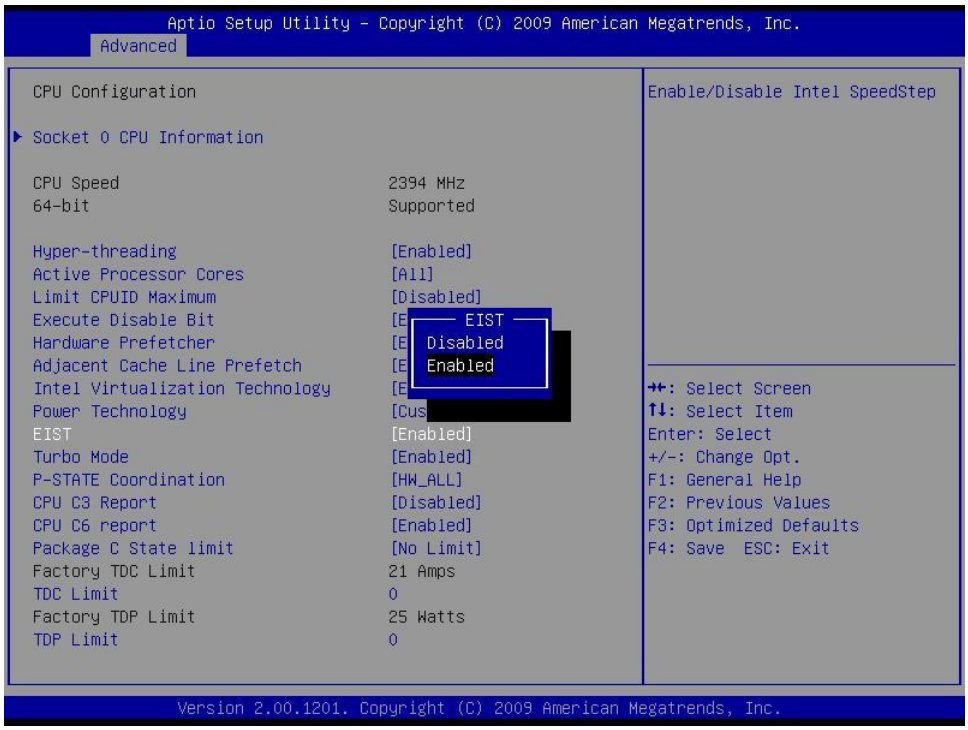
To turn on/off prefetching of adjacent cache lines.

Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Power Technology

Enable the power management features.

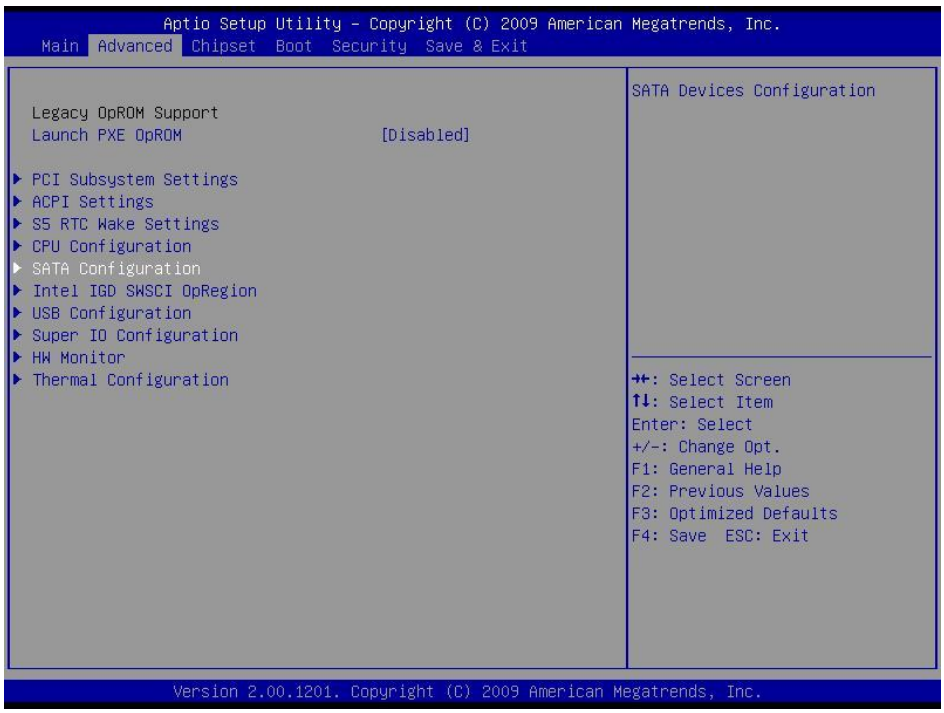


TDC Limit / TDP Limit

Turbo-XE Mode Processor TDC Limit in 1/8 A granularity. 0 means using the factory-configured value.

SATA Configuration

SATA Devices Configuration.

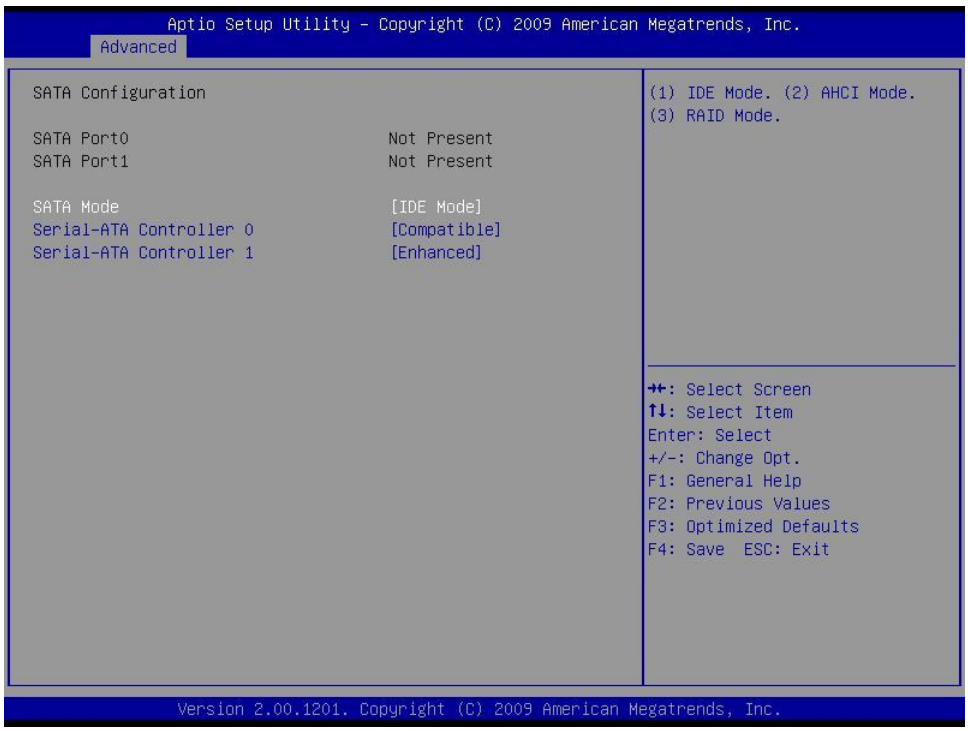


SATA Mode

(1) IDE Mode. (2) AHCI Mode. (3) RAID Mode.

IDE Mode：This option configures the Serial ATA drives as Parallel ATA storage devices.

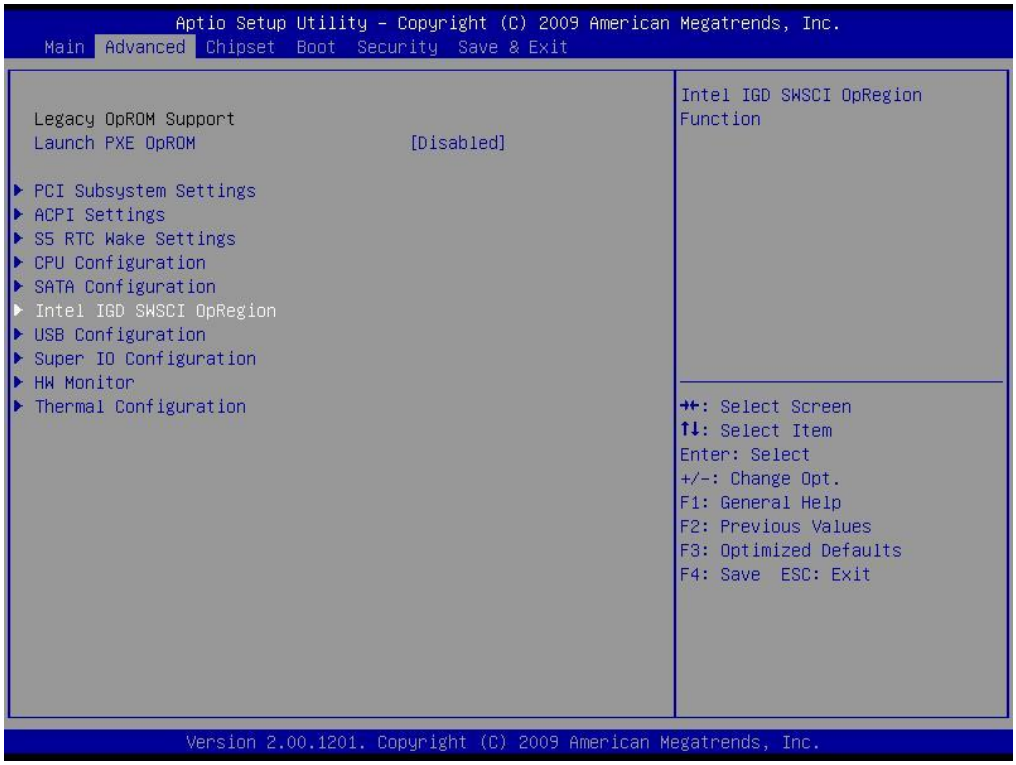
AHCI Mode：This option allows the Serial ATA devices to use AHCI (Advanced Host ControllerInterface).

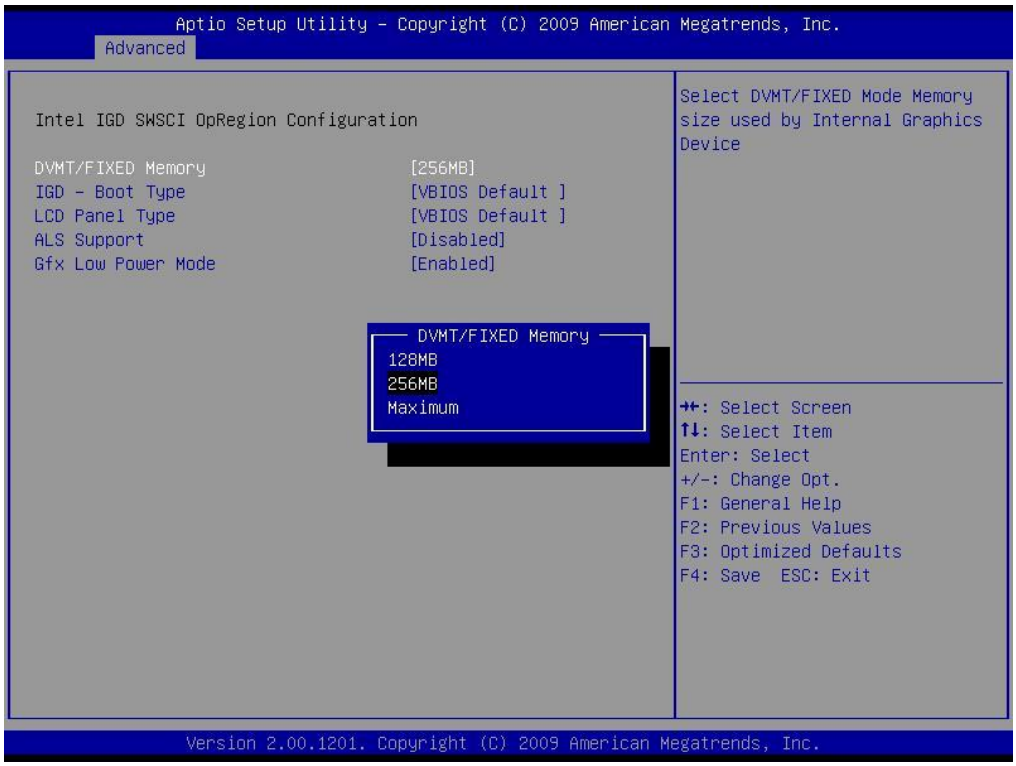


Serial-ATA Controller

Enable / Disable Serial ATA Controller.

Intel IGD SWSCI OpRegion





DVMT/FIXED Memory

Select DVMT/FIXED Mode Memory size used by Internal Graphics Device. Options are 128MB, 256MB and Maximum.

IGD – Boot Type

Select the Video Device which will be activated during POST. This has no effect if external graphics present. Options are VBIOS Default, CRT, LFP, CRT+LFP, EFP and CRT+EFP.

LCD Panel Type

Selects the LCD panel used by the internal graphics device.

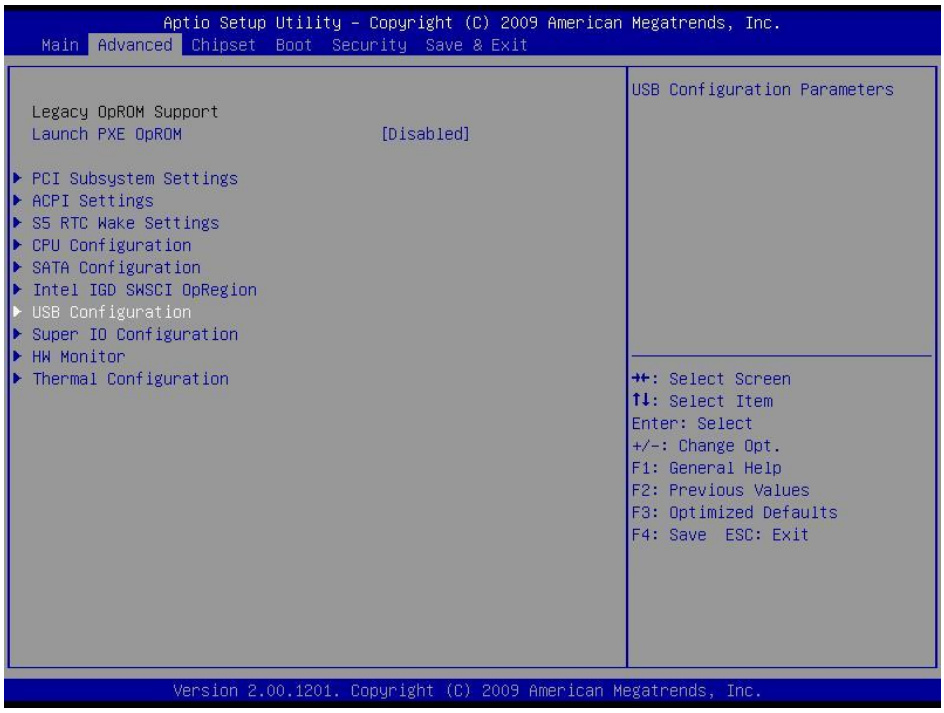
ALS Support

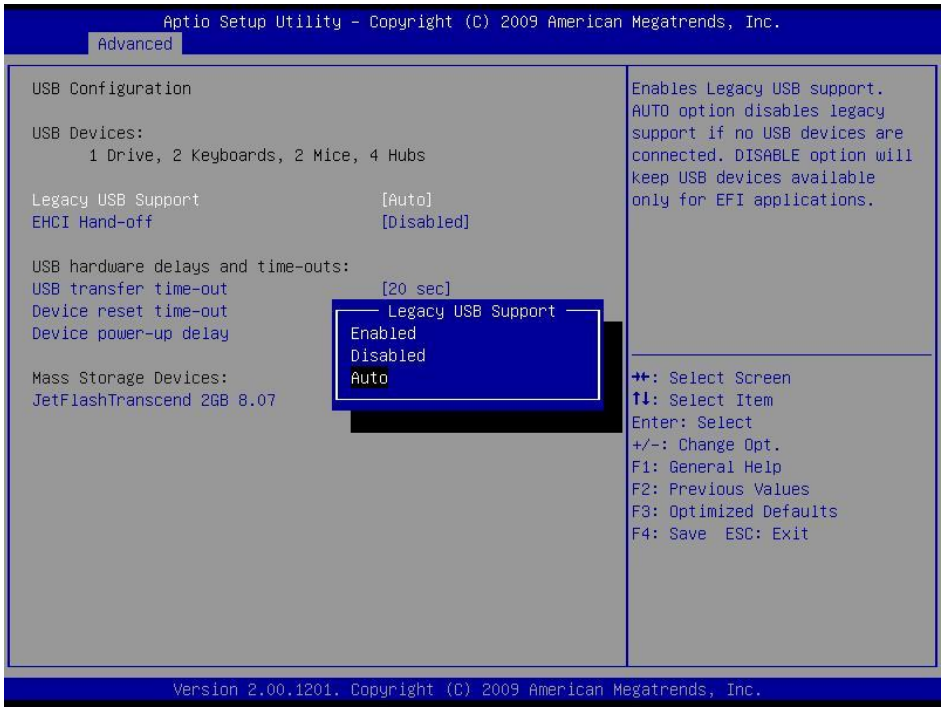
Enabled or Disabled. Valid only for ACPI. Legacy = ALS Support through the IGD INT10 function. ACPI = ALS support through an ACPI ALS driver.

Gfx Low Power Mode

Enabled or Disabled. This option is applicable for SFF only.

USB Configuration





Legacy USB Support

Enabled-Enables legacy USB.

Auto-Disables support for legacy when no USB devices are connected.

Disabled-Keeps USB devices available only for EFI applications.

EHCI Hand-off

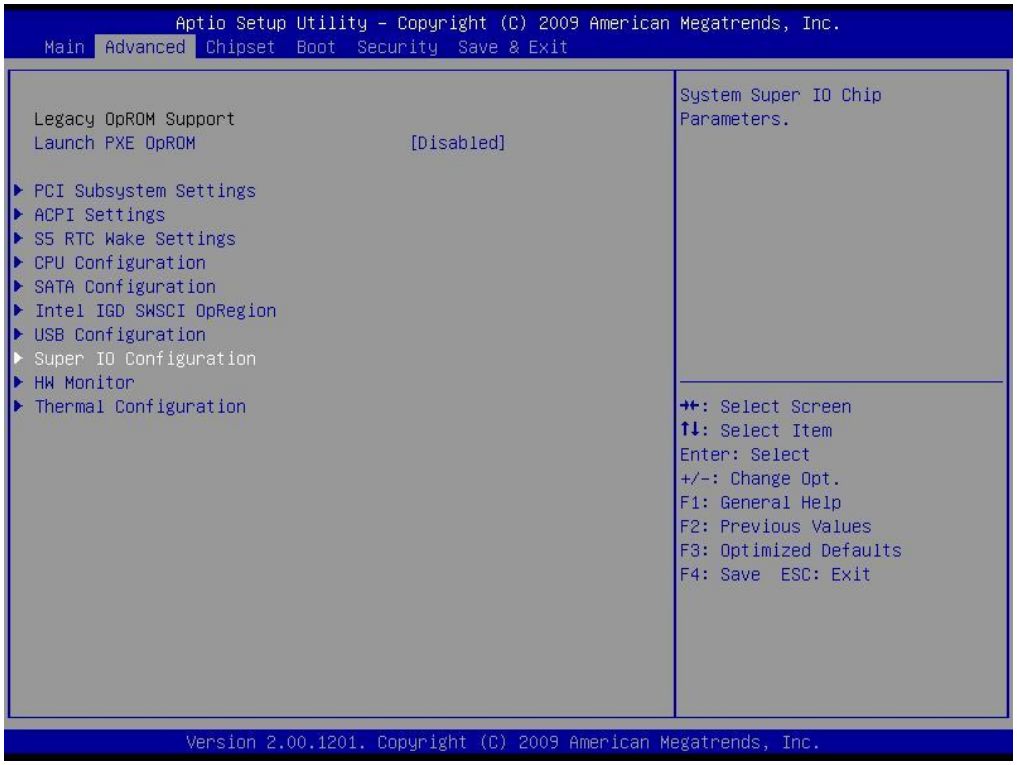
This is a workaround for OSes that does not support EHCI hand-off. The EHCI ownership change should be claimed by the EHCI driver.

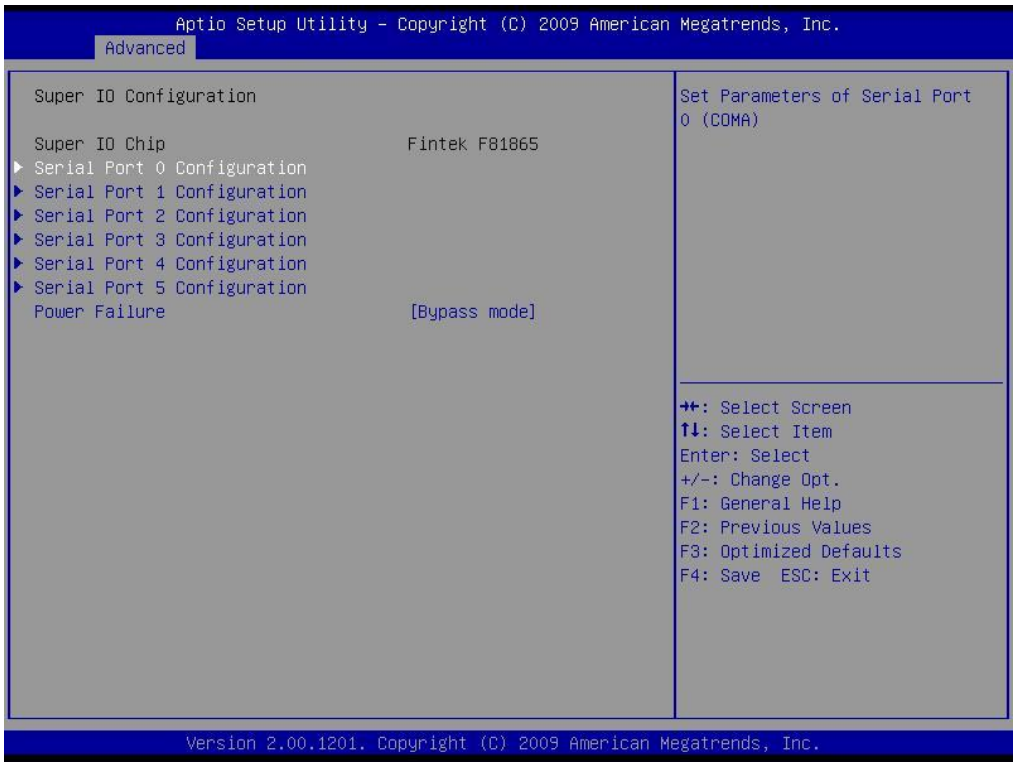
Device Reset Timeout

USB mass storage device Start Unit command timeout.

Options are: 10 sec / 20 sec / 30 sec / 40 sec.

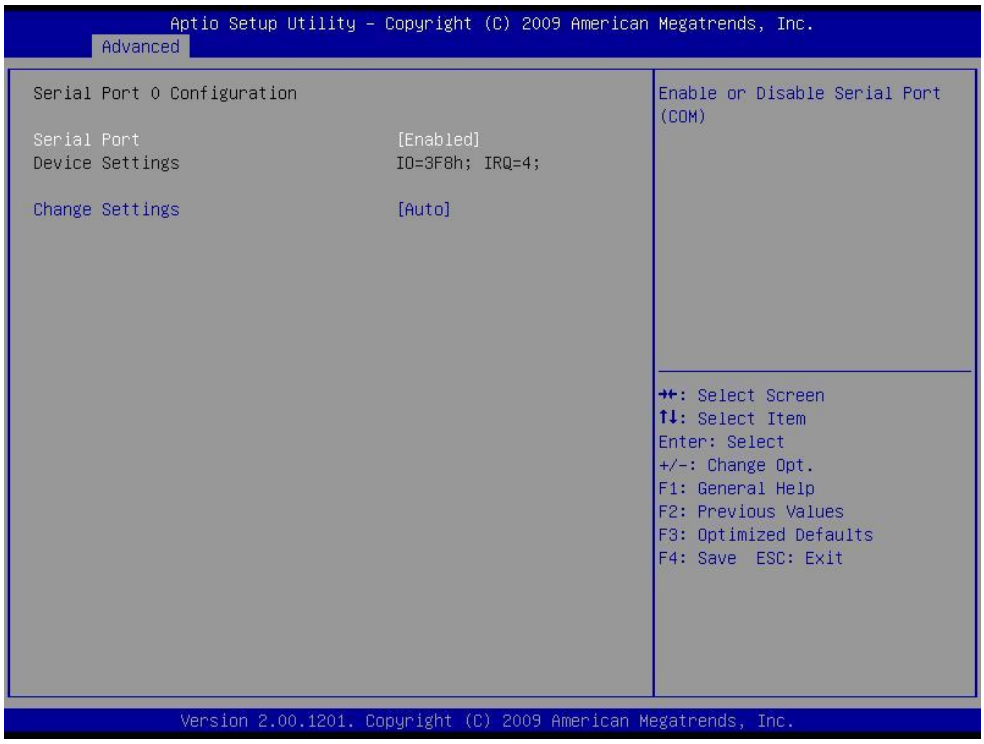
Super IO Configuration





Serial Port Configuration

Set Parameters of Serial Ports. User can Enable/Disable the serial port and Select an optimal settings for the Super IO Device.

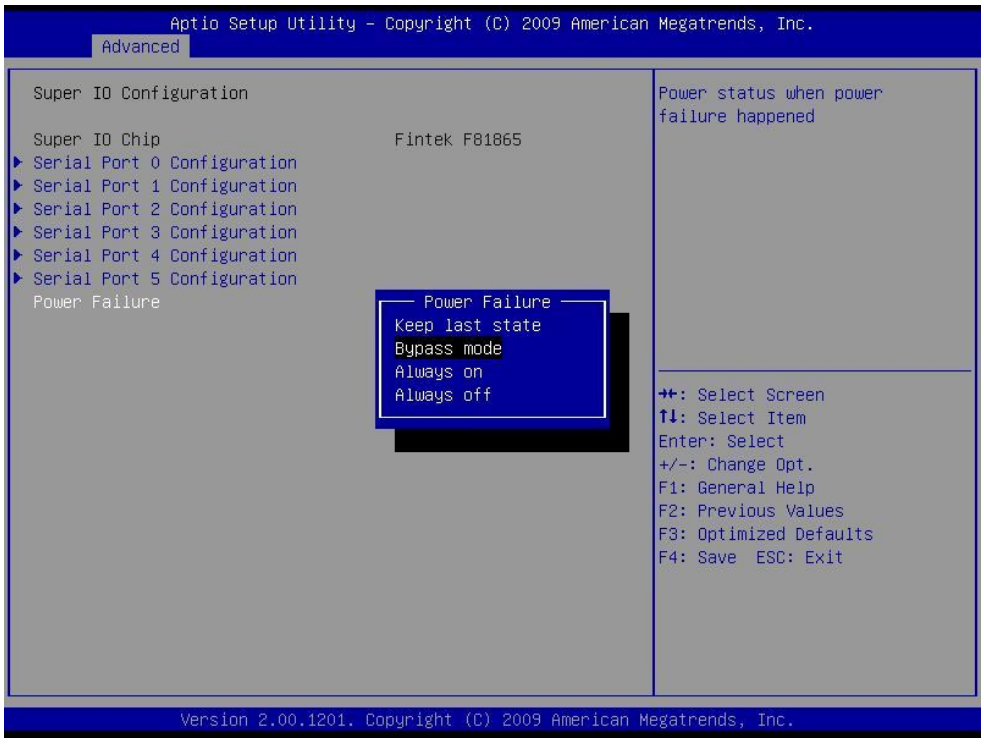


Serial Port

Enables or disables the serial port.

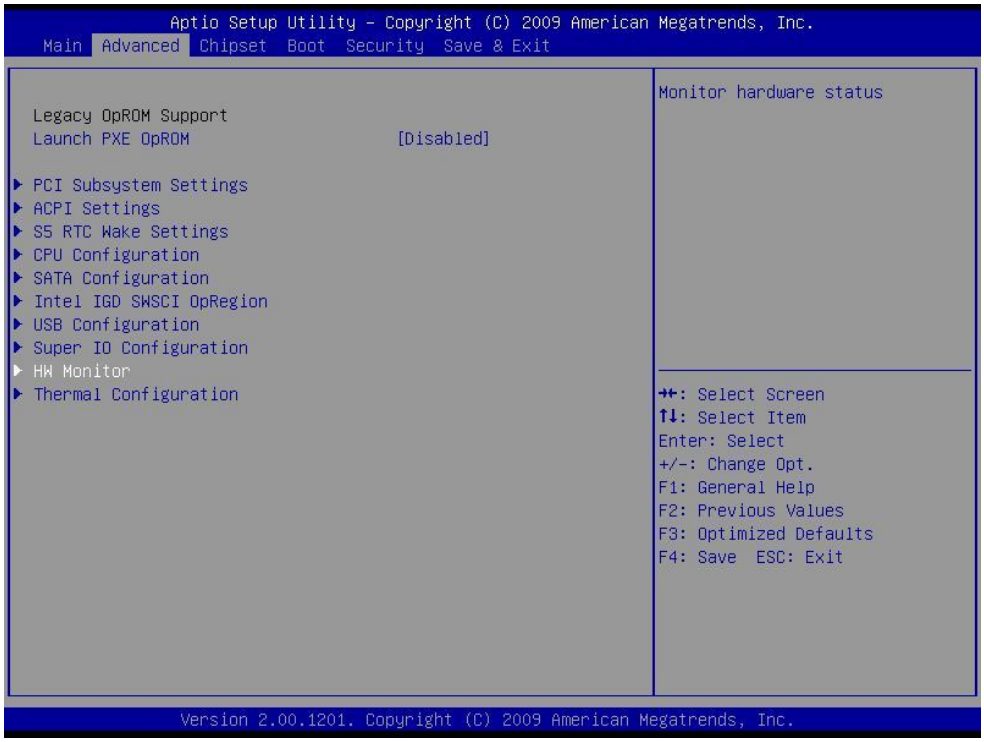
Change Settings

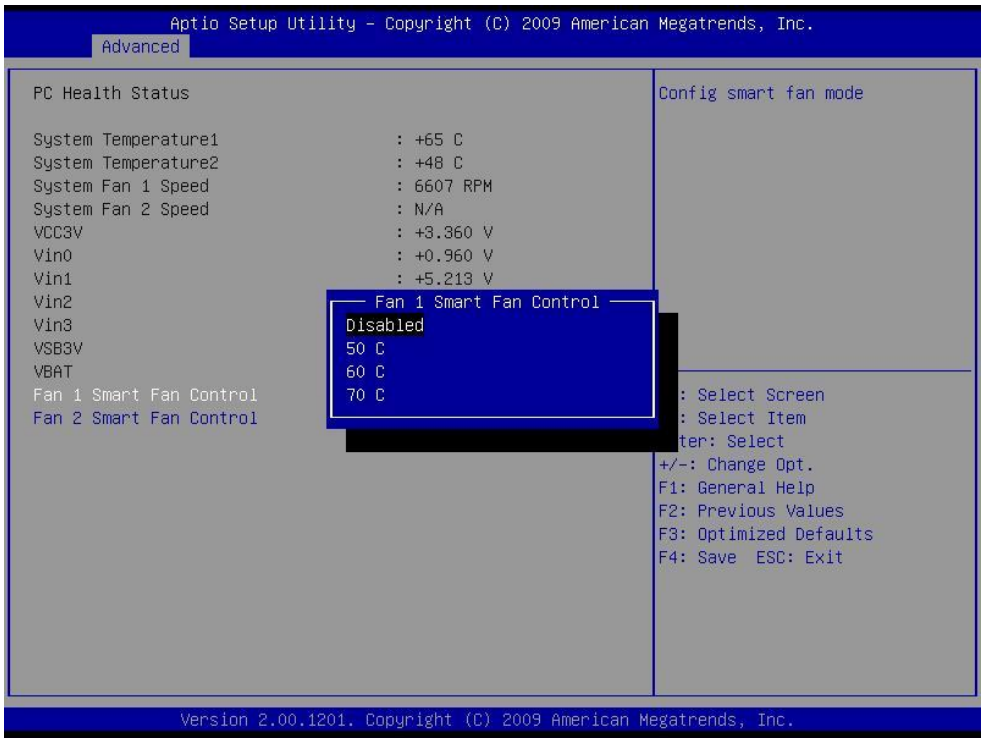
Selects the IO/IRQ setting of the I/O device.



Power Failure Options are: Keep last state 、Bypass mode 、Always on 、Always off (default)

HW Monitor

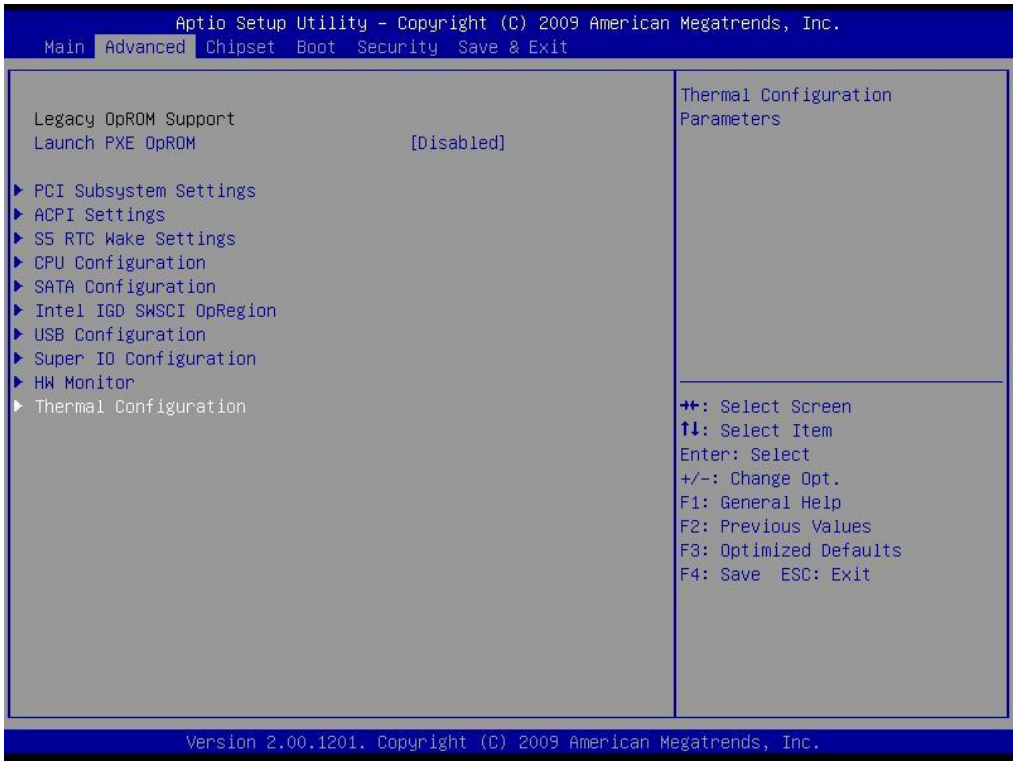


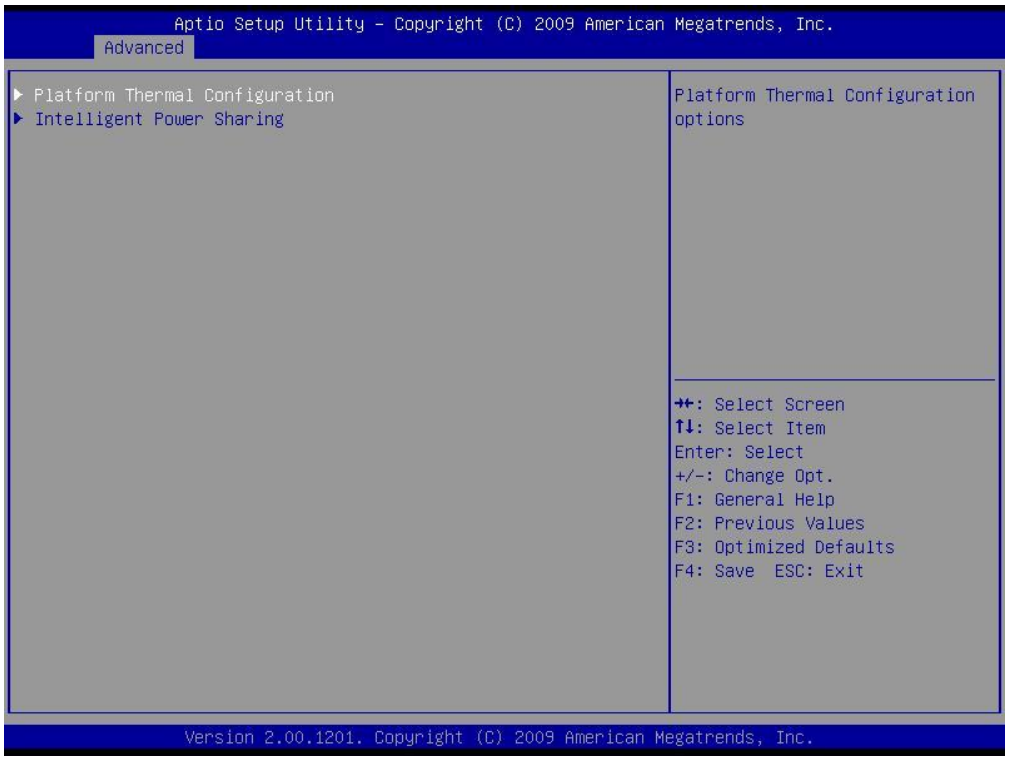


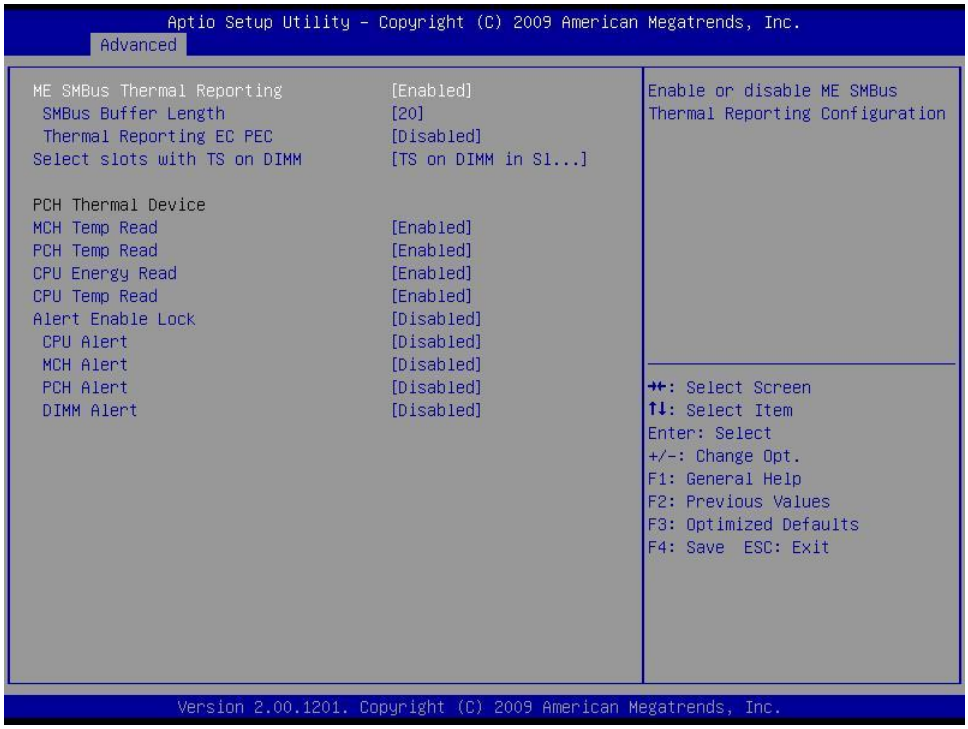
Fan1/Fan2 Smart Fan Control

This field enables or disables the smart fan feature. At a certain temperature, the fan starts turning. Once the temperature drops to a certain level, it stops turning again.

Thermal Configuration







ME SMBus Thermal Reporting

Enable/Disable ME SMBus Thermal Reporting Configuration.

MCH Temp Read

MCH Temperature Read Enable.

PCH Temp Read

PCH Temperature Read Enable.

CPU Energy Read

CPU Energy Read Enable.

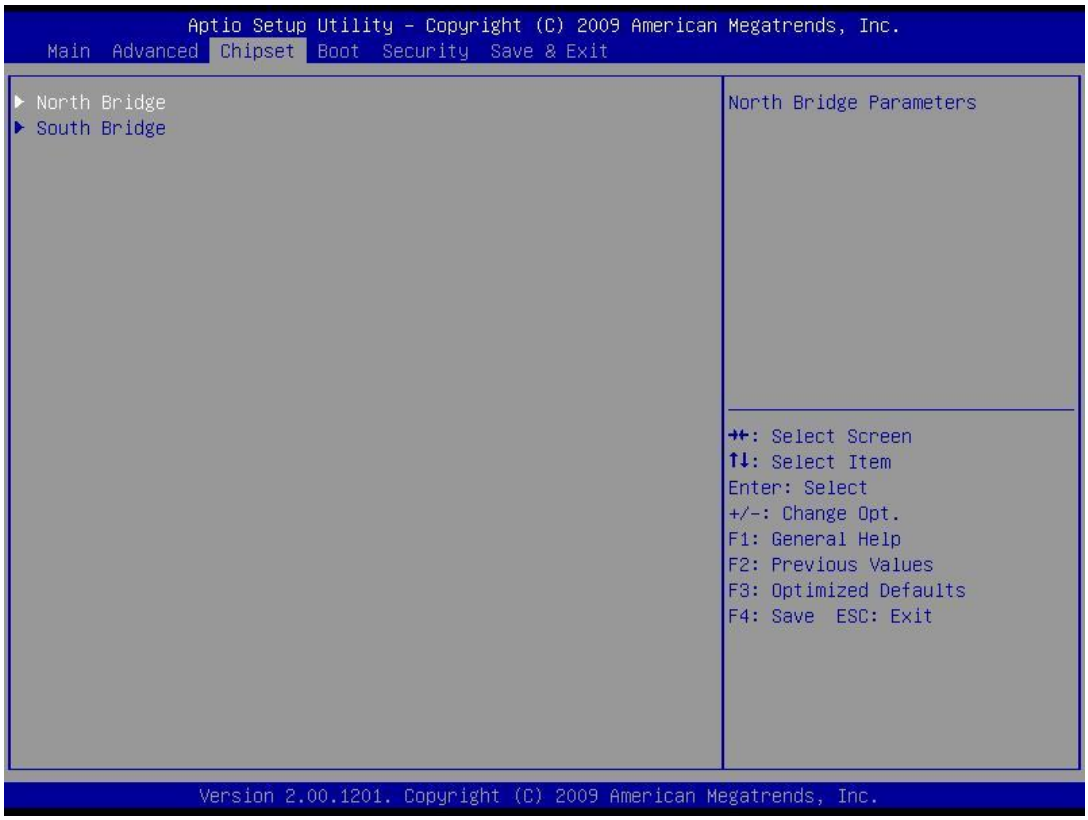
CPU Temp Read

CPU Temperature Read Enable.

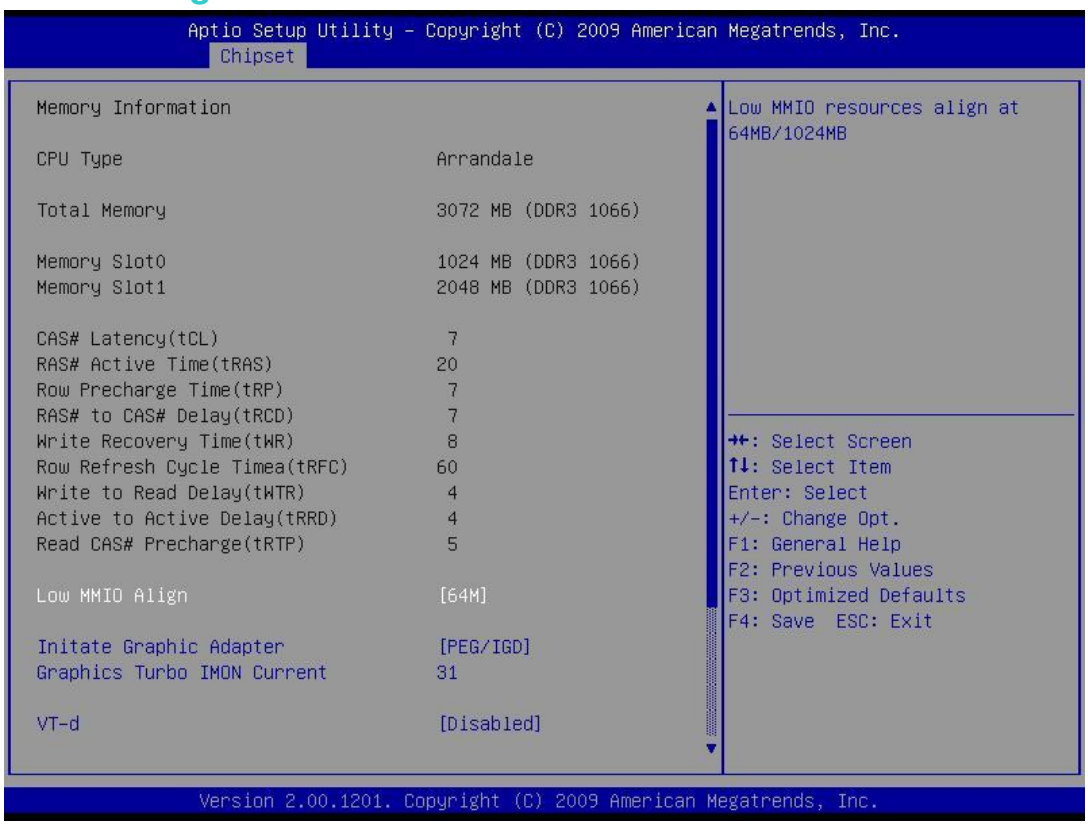
Alert Enable Lock

Lock all Alert Enable settings.

7.4 Chipset Setting



North Bridge



Low MMIO Align

Low MMIO resources align at 64MB/1024MB.

Initiate Graphic Adapter

Select which graphics controller to use as the primary boot device. Options are IGD, PCI/IGD, PCI/PEG, PEG/IGD, PEG/PCI and SG.

Graphics Turbo IMON Current

Graphics turbo IMON current values supported (14-31).

VT-d

VT-d Enable/Disable.

PCI Express Compliance Mode

PCI Express Compliance Mode Enable/Disable.

PCI Express Port

Options are Disabled, Enabled and Auto.

IGD Memory

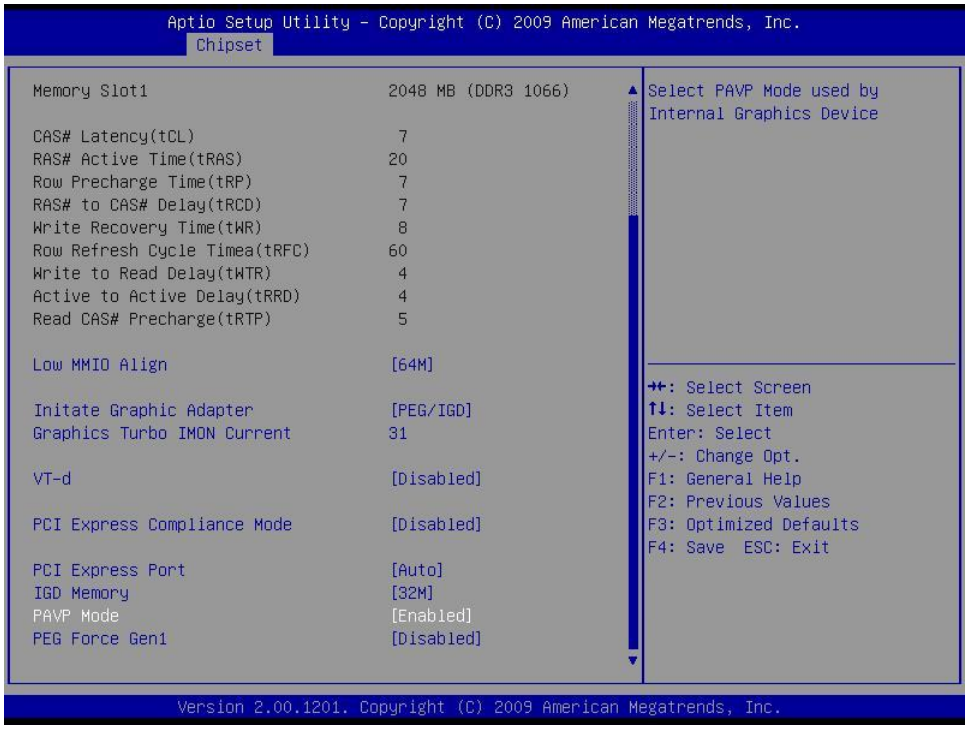
IGD Share Memory Size. Options are Disable, 32M, 64M and 128M.

PAVP Mode

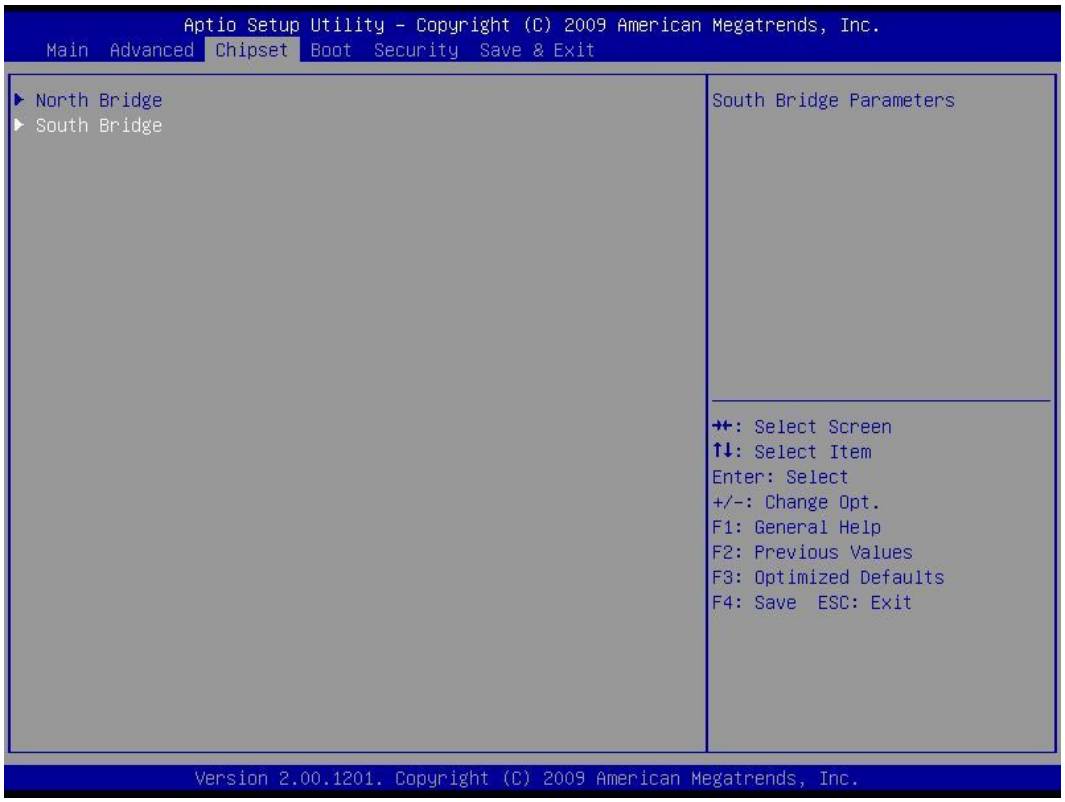
Select PAVP Mode used by Internal Graphics Device. Options are Disabled and Enabled.

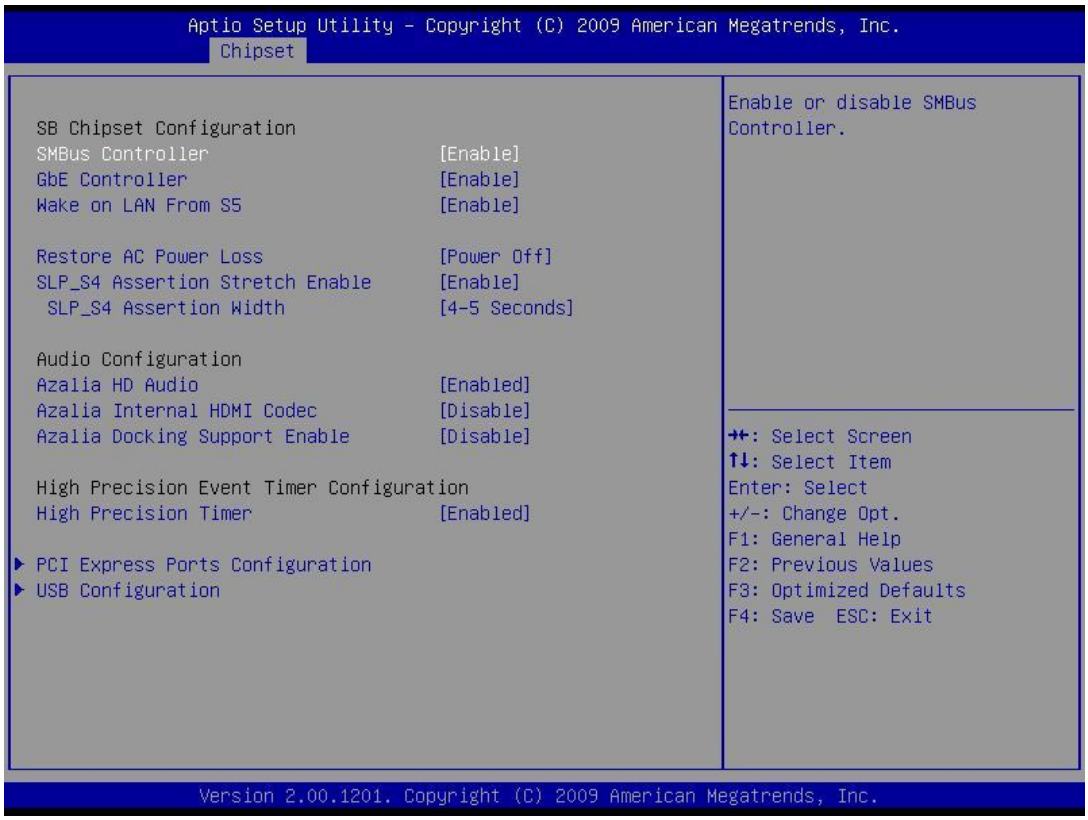
PEG Force Gen1

PCI Express Port Force Gen1. Options are Disabled and Enabled.



South Bridge





SMBus Controller

SMBus Controller help.

GbE Controller

This is constantly enabled.

Wake on LAN from S5

Wake on LAN from S5 help.

Restore AC Power Loss

Options are Power Off, Power On and Last State.

SLP_S4 Assertion Stretch Enable

Select a minimum assertion width of the SLP_S4# signal.

Azalia HD Audio

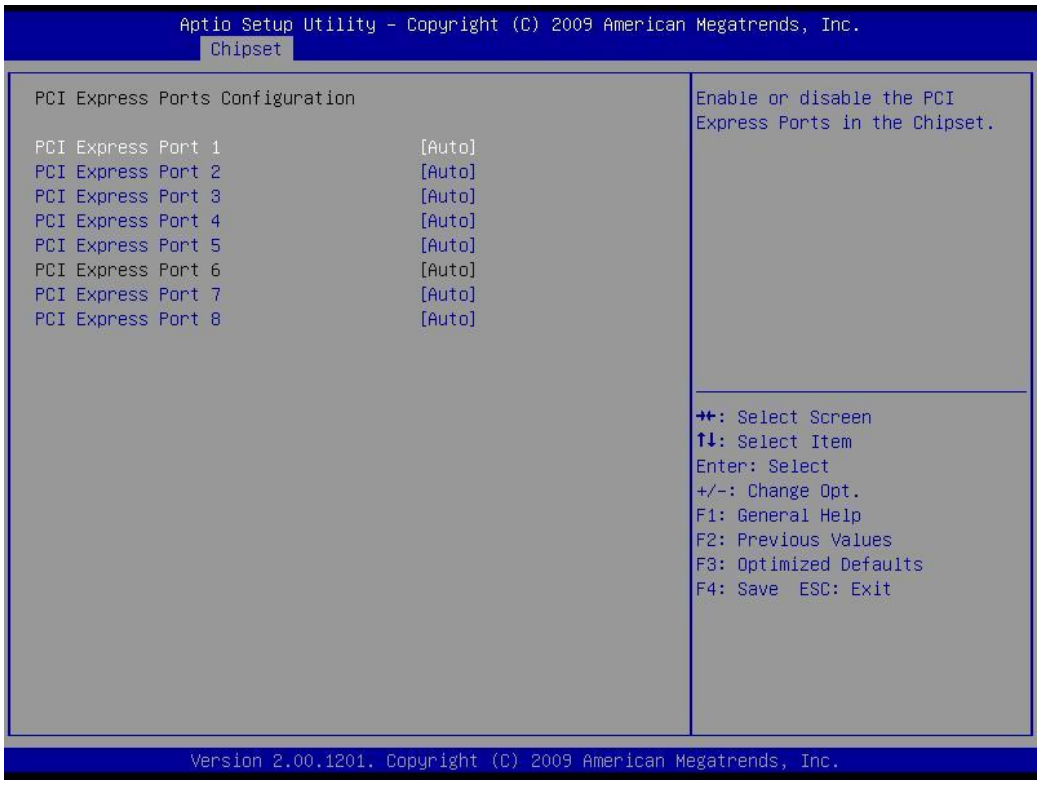
Enables or disables the Azalia HD audio.

High Precision Timer

Enables or disables the high precision event timer.

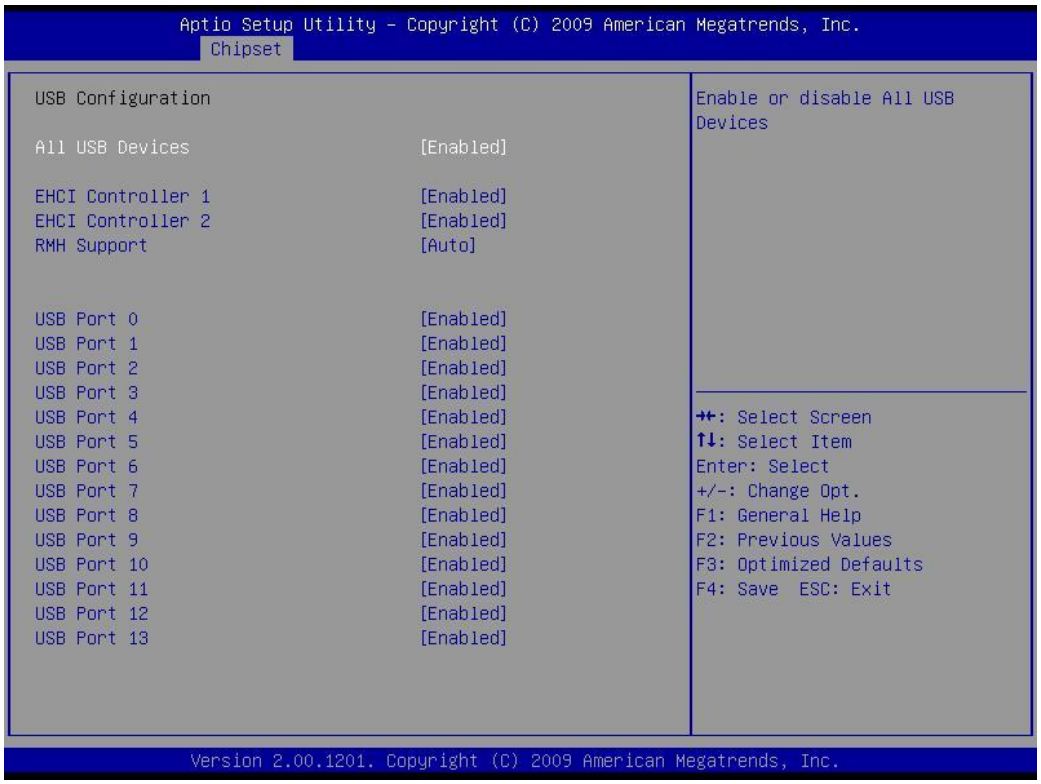
PCI Express Ports Configuration

Enable or Disable the PCI Express Ports in the Chipset.



USB Configuration

Enable/Disable All USB Devices, USB 2.0 (EHCI) Support and RMH Support. The setting of AUTO on RMH Support Enable RMH support on Ibex Peak B0 Stepping.



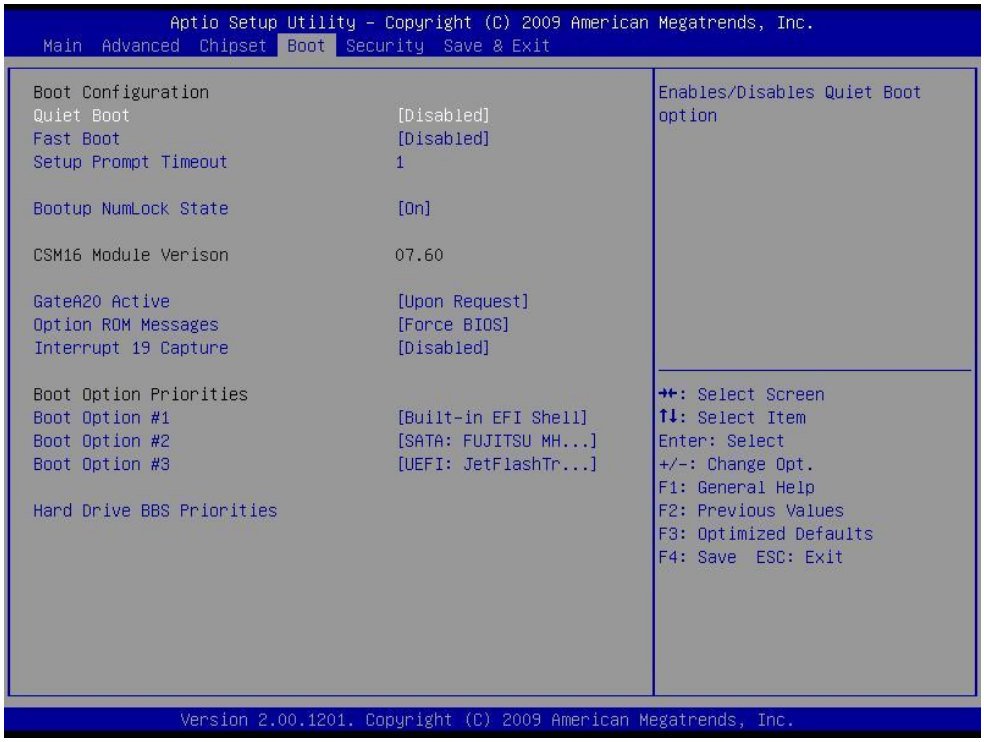
All USB Devices

Enables or disables all USB devices.

EHCI Controller 1 and EHCI Controller 2

These fields are used to enable or disable Enhanced Host Controller Interface (USB 2.0).

7.5 Boot



Quiet Boot

Enables or disables the quiet boot function.

Fast Boot

Enables/Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

GateA20 Active

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

Set display mode for Option ROM. Options are Force BIOS and Keep Current.

Boot Option #1、#2、#3

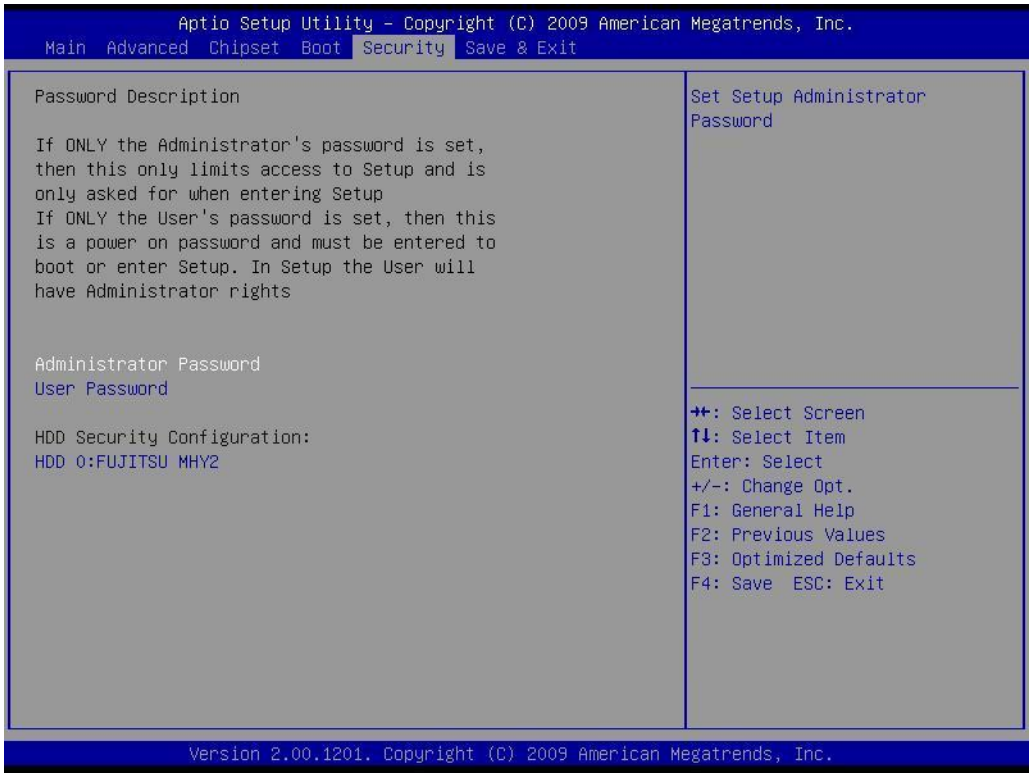
Selects the boot sequence of the device.

Hard Drive BBS Priorities

Set the order of the legacy devices in this group.

7.6 Security

This section allows you to configure and improve your system and llows you to set up some system features according to your preference.



Administrator Password

Set Setup Administrator Password.

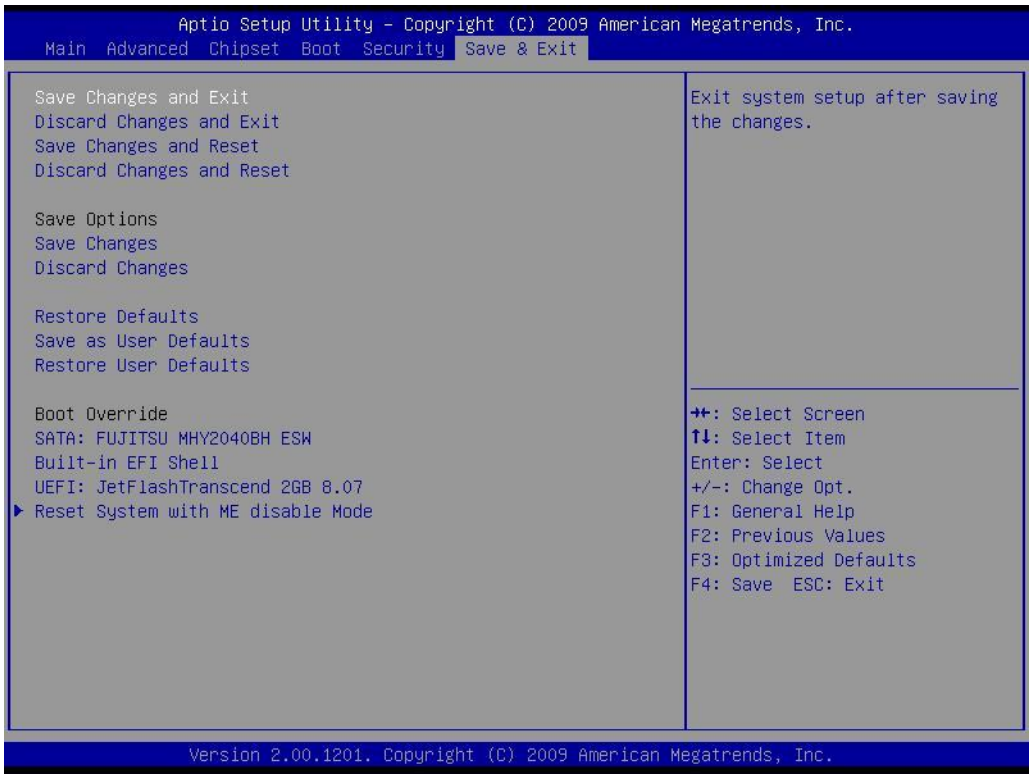
User Password

Set User Password.

HDD 0: FUJITSU MHY2

Sets the HDD password.

7.7 Save & Exit



Save Changes and Exit

Exit system setup after saving the changes.

Disacard Changes and Exit

Exit system setup without saving any changes.

Save Changes and Reset

Reset the system after saving the changes.

Discard Changes and Reset

Reset system setup without saving any changes.

Save Changes

Save Changes done so far to any of the setup options.

Discard Changes

Discard Changes done so far to any of the setup options.

Restore Defaults

Restore/Load Defaults values for all the setup options.

Save as User Defaults

Save the changes done so far as User Defaults.

Restore User Defaults

Restore the User Defaults to all the setup options.

Reset System with ME disable Mode

ME will run into the temporary disable mode.