SI-58 Series

User Manual

2012 Jun V1

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Safety Information

Your SI-58 is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions.

Setting up your system

- Read and follow all instructions in the documentation before you operate your system.
- Do not use this product near water.
- Set up the system on a stable surface. Do not secure the system on any unstable plane.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the system for ventilation. ***Never insert objects of any kind into the ventilation openings***.
- This system should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- Use this product in environments with ambient temperatures between 0˚C and 45˚C.
- If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.
- DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THESTORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 80° C (176° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill water or any other liquids on your system.
- When the system is turned off, a small amount of electrical current still flows. Always unplug all power, and network cables from the power outlets before

cleaning the system.

- If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.
  - The power cord or plug is damaged.
  - Liquid has been spilled into the system.
  - The system does not function properly even if you follow the operating instructions.
  - The system was dropped or the cabinet is damaged.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if 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.

NO DISASSEMBLY

The warranty does not apply to the products that have been disassembled by users

WARNING
HAZARDOUS MOVING PARTS
KEEP FINGERS AND OTHER BODY PARTS AWAY

Acknowledgments

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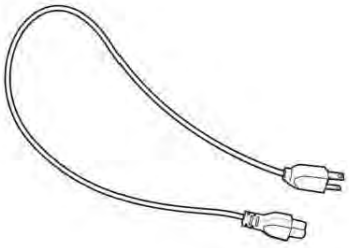
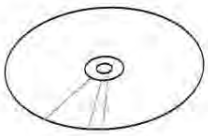
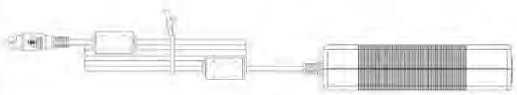
Accessories

	
a. Power Cord x 1	b. System Manual x 1
	
c. Driver CD x 1	d. Power Brick x 1

Components

I/O View

Refer to the diagram below to identify the components on this side of the system.

Power Bottom

The power switch allows powering ON and OFF the system.

HDD

The hard disk LED blinks when data is being written into or read from the hard disk

HDD

The power LED illuminated when system been power on.

HDMI 1/2/3/4/5/6

The HDMI (High Definition Multimedia Interface) (connector 6 exclusive) interface to transmitting uncompressed digital data come from E6760 (discrete graphic chip).

LAN 1/ LAN2

The eight-pin RJ-45 LAN port supports a standard Ethernet cable for connection to a local network.

COM 1/ COM 2

Communication or serial port is compatible with RJ 45 interface without RI (ring indicator) signal.

USB

The USB (Universal Serial Bus) port is compatible with USB devices such as keyboards, mouse devices, cameras, and hard disk drives. USB allows many devices to run simultaneously on a single computer, with some peripheral acting as additional plug-in sites or hubs.

AUDIO

The stereo audio jack (3.5mm) is used to connect the system's audio out signal to amplified speakers or headphones.

DC-IN 12 V

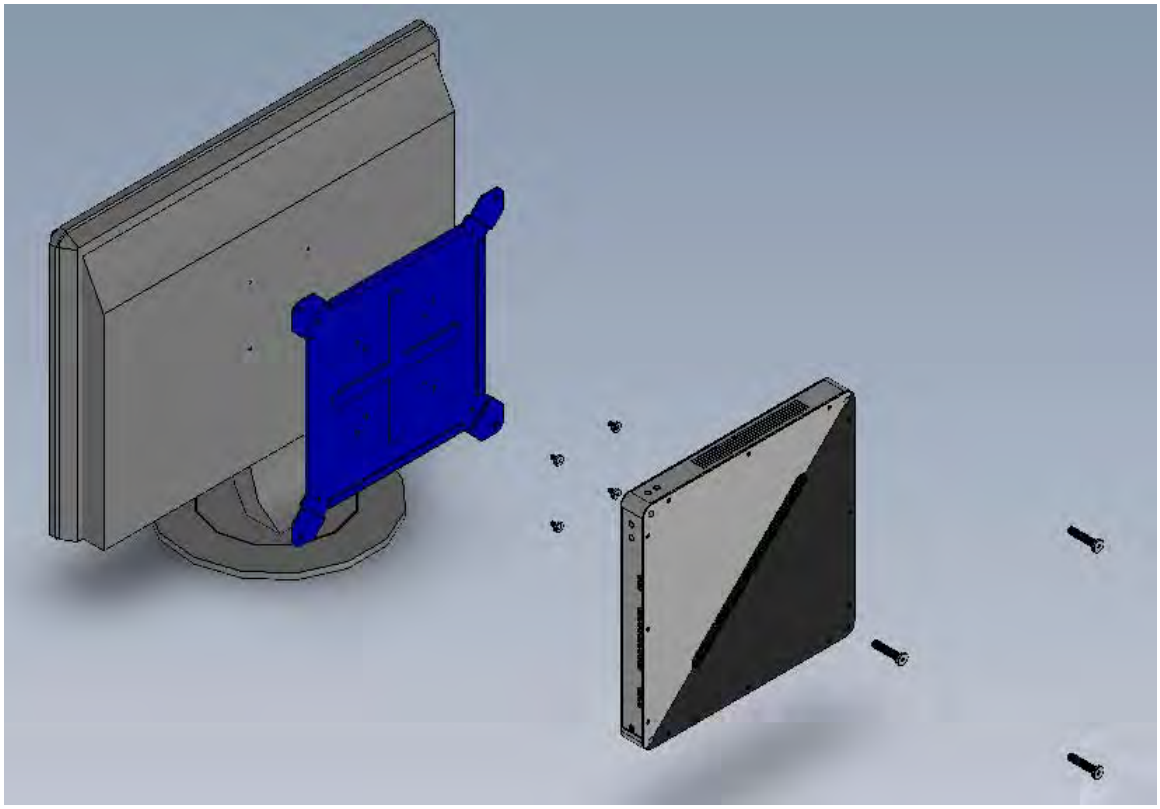
The supplied power adapter converts AC power to DC power for use with this jack. Power supplied through this jack supplies power to the system. To prevent damage to the system, always use the supplied power adapter.

Specification

System Mainboard	IB958-58
Construction	SGCC 1.0t
Chassis Color	Black / White
Storage	2.5” 160GB SATA HDD x 1
Mounting	Wall mount
Power Supply	150W DC adapter
Operating Temperature	0°C ~ 45°C (32°F ~ 113°F)
Storage Temperature	-20°C ~ 80°C
Relative Humidity	5~90% @45°C (non-condensing)
Vibration	HDD: 0.25 Grms/5~500Hz random operation
Shock	HDD: 15 Grms peak acceleration (11 msec duration)
RoHS	Available

·This specification is subject to change without prior notice.

Mounting SI-58 to the Wall



You can install SI-58 on plastic (LCD monitor), wood, drywall surface over studs, or

a solid concrete or metal plane directly. Ensure the installer uses at least four M3 length 6mm screws to secure the system on wall. ***Six M3 length 6mm screws are recommended to secure the system on wall.***

Fasteners are not included with the unit, and must be supplied by the installer. The types of fasteners required are dependent on the type of wall construction. Choose fasteners that are rated either ”Medium Duty“ or ”Heavy Duty.“ To assure proper fastener selection and installation, follow the fastener manufacturer’s recommendations.

Wall mounting requirements

Note: *Before mounting the system on wall, ensure that you are following all applicable building and electric codes.*

When mounting, ensure that you have enough room for power and signal cable routing. And have good ventilation for power adapter. The method of mounting must be able to support weight of the SI-58 plus the suspend weight of all the cables to be attached to the system. Use the following methods for mounting your system:

Mounting to hollow walls

- **Method 1: Wood surface** – A minimum wood thickness – 38mm (1.5in.) by 25.4 cm (10in.) – of high, construction – grade wood is recommended. **Note:** This method provides the most reliable attachment of the unit with little risk that the unit will come loose or require ongoing maintenance.
- **Method 2: Drywall walls** - Drywall over wood studs is acceptable.

Mounting to a solid concrete or brick wall - Mounts on a flat smooth surface.

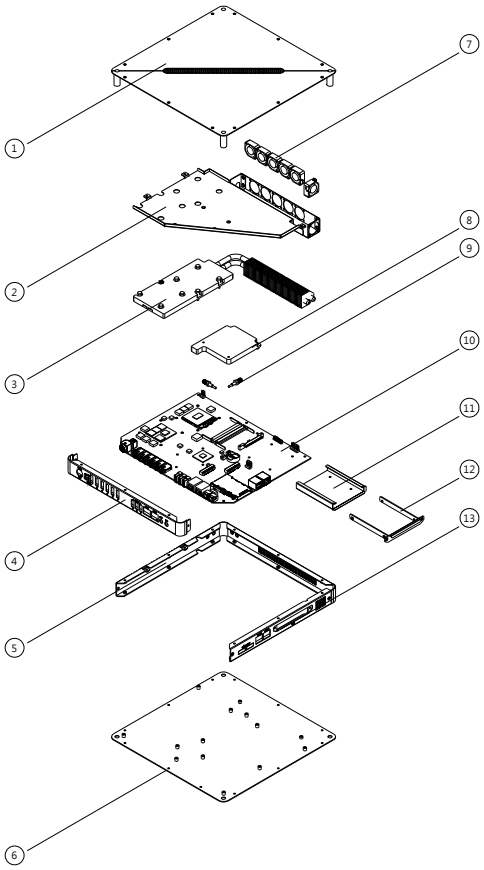
Selecting the location

Plan the mounting location thoroughly. Locations such as walkway areas, hallways, and crowded areas are not recommended. Mount the unit to a flat, sturdy, structurally sound column or wall surface.

The best mounting surface is a standard countertop, cabinet, table, or other structure that is minimally the width and length of the unit. This recommendation

reduces the risk that someone may accidentally walk into and damage the device. Local laws governing the safety of individuals might require this type of consideration.

Exploded view of the SI-58 assembly



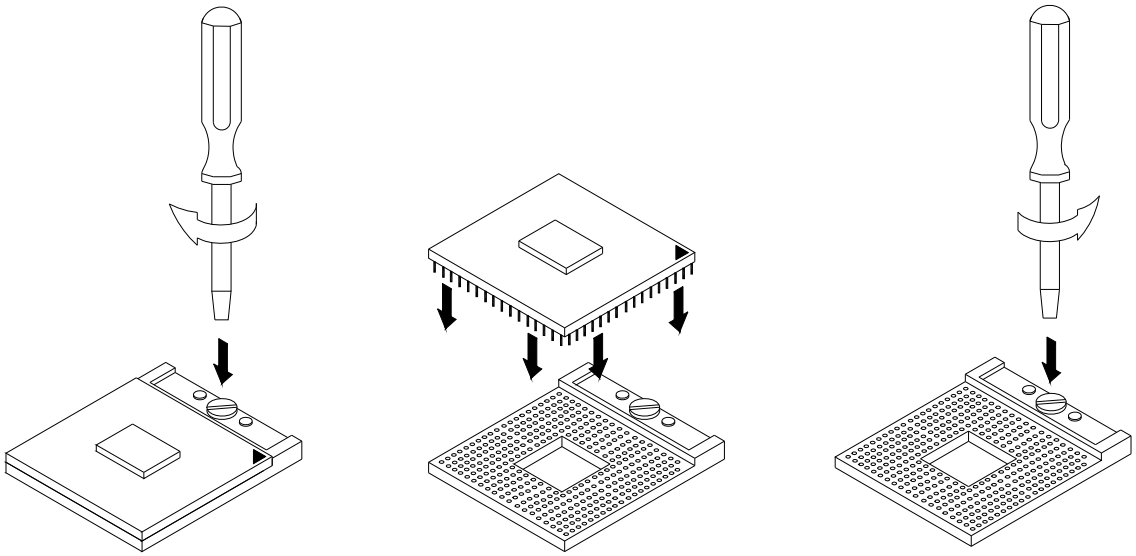
Parts description

Part NO.	Description	Part NO.	Description
1	Top cover	2	Fan Bracket
3	Heatsink-1	4	Front Panel
5	Panel-1	6	Base
7	Fan set	8	Heatsink-2
9	Antenna screw	10	IB958-58 MB
11	HDD Bracket	12	HDD Tray
13	Panel-2		

Installation

Installing CPU

The SI-58 (IB958 board) supports rPGA988B socket for Intel® Sandy Bridge Dual Core mobile processors.
The processor socket comes with a screw to secure the processor. As shown in the left picture below, loosen the screw first before inserting the processor. Place the processor into the socket by making sure the notch on the corner of the CPU corresponds with the notch on the inside of the socket. Once the processor has slide into the socket, fasten the screw. Refer to the figures below.



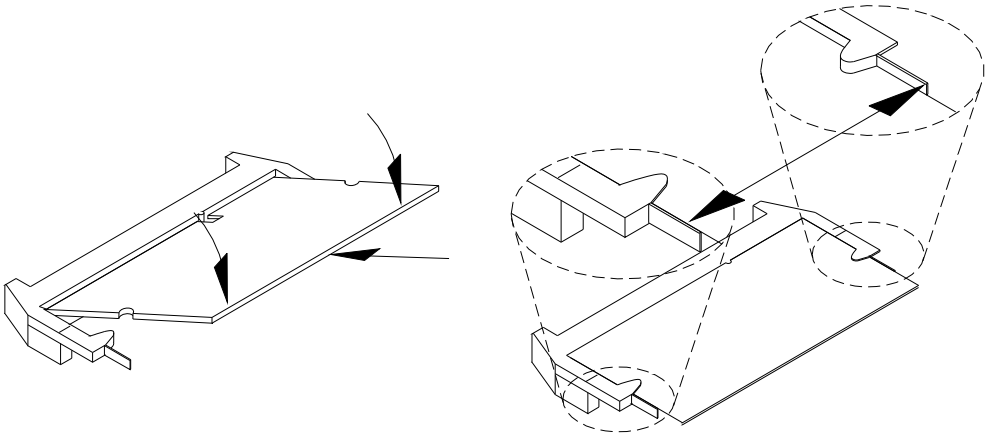
Installing the memory

The IB958 board supports two DDR3 memory socket for a maximum total memory of 8GB in DDR3 SO-DIMM memory type.
Installing and Removing Memory Modules
To install the DDR3 modules, locate the memory slot on the board and perform the following steps:

1. Hold the DDR3 module so that the key of the DDR3 module aligns with that on the memory slot. Insert the module into the socket at a slight angle

(approximately 30 degrees). Note that the socket and module are both keyed, which means that the module can be installed only in one direction.

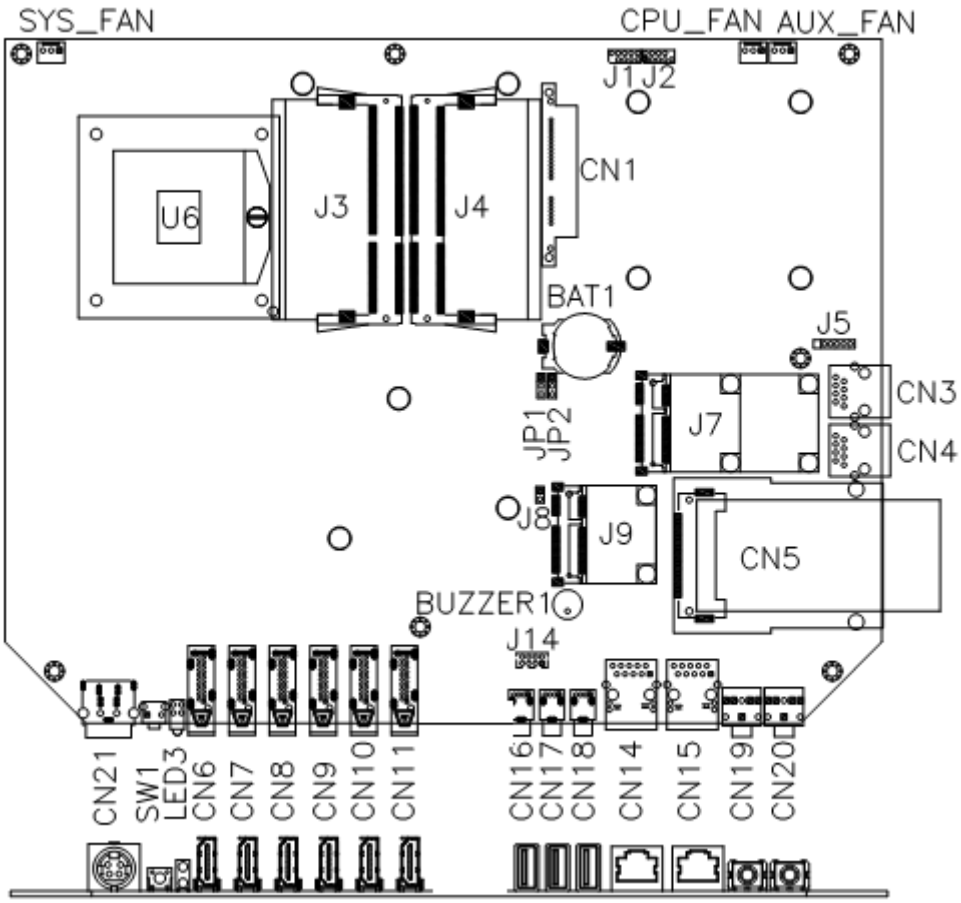
2. To seat the memory module into the socket, apply firm and even pressure to each end of the module until you feel it slip down into the socket.
3. With the module properly seated in the socket, rotate the module downward. Continue pressing downward until the clips at each end lock into position.
4. To remove the DDR3 module, press the clips with both hands.



Setting Jumper

Jumpers are used on IB958 to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your needs. The following lists the connectors on IB958 and their respective functions.

Jumper Locations



JP1: Clear CMOS Setting

JP1	Setting	Function
	Pin 1-2 Short/Closed	Normal
	Pin 2-3 Short/Closed	Clear CMOS

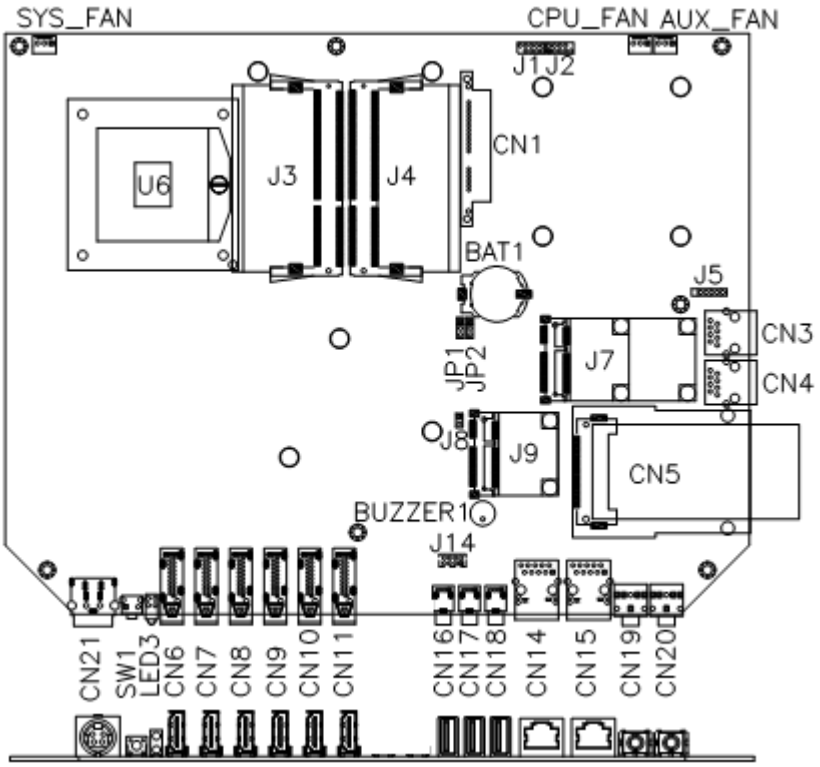
JP2: Clear ME Setting

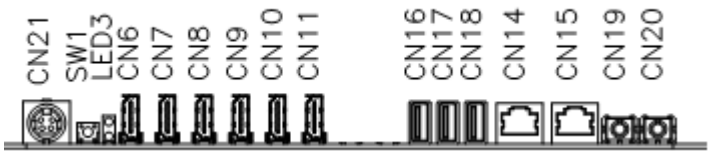
JP2	Setting	Function
	Pin 1-2 Short/Closed	Normal
	Pin 2-3 Short/Closed	Clear ME

JP8: Flash Descriptor Security Overide (Factory use only)

J8	Flash Descriptor Security Overide
Open	Disabled (Default)
Close	Enabled

Connector Locations on IB958





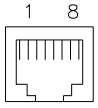
CN1: SATA HDD Dock

The SATA HDD dock combines a SATA power connector and a SATA interface connector

Signal Name	Pin #	Pin #	Signal Name
GND	S1	P1	V3.3
A+	S2	P2	V3.3
A-	S3	P3	V3.3
GND	S4	P4	GND
B+	S5	P5	GND
B-	S6	P6	GND
GND	S7	P7	GND
		P8	V5
		P9	V5
		P10	V5
		P11	Reserve
		P12	GND

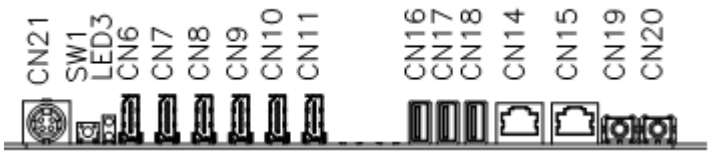
CN3, CN 4: Console Port (CN3 COM2, CN4 COM1)

The console port is an RJ45 RS-232 serial port.



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

CN5: Express Card



CN6, CN7, CN8, CN9, CN10, CN11: ATI E6760 HDMI Connectors

Signal Name	Pin #	Pin #	Signal Name
DATA 2-	1	2	GND
DATA 2+	3	4	DATA 1+
GND	5	6	DATA 1-
DATA 0+	7	8	GND
DATA 0-	9	10	CLOCK +
GND	11	12	CLOCK -
NC	13	14	NC
DDC CLOCK	15	16	DDC DATA
GND	17	18	+5V
HOT POWER	19	20	N.C.

Remarks: CN6/CN7 supports HDMI.

CN12, CN13: Intel Chipset HDMI Connectors

Signal Name	Pin #	Pin #	Signal Name
DATA 2-	1	2	GND
DATA 2+	3	4	DATA 1+
GND	5	6	DATA 1-
DATA 0+	7	8	GND
DATA 0-	9	10	CLOCK +
GND	11	12	CLOCK -
NC	13	14	NC
DDC CLOCK	15	16	DDC DATA
GND	17	18	+5V
HOT POWER	19	20	N.C.

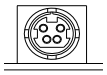
Remarks: CN12/CN13 supports HDMI.

CN14, CN15: Gigabit LAN RJ45 Ports

CN16, CN17, CN18: USB1/2/3 Ports

CN19, CN20: Audio Line In and Line Out

CN21: DC Power Jack (+12V only)



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

SW1: Power Button

LED3: Power LED and HDD LED

The green LED at the bottom is power LED. The red LED on top is the HDD LED.

J1: SPI Flash Connector (factory use only)

J2: LPC Connector (factory use only)

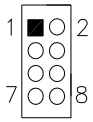
J3: DDR II DIMM Socket CHA

J4: DDR II DIMM Socket CHB

J5: Msp430F2330 Flash Connector (factory use only)

J7, J9: Mini PCI-E X1 Socket

J14: USB5/USB6 Connector



Signal Name	Pin	Pin	Signal Name
Vcc	1	2	Ground
D0-	3	4	D1+
D0+	5	6	D1-
Ground	7	8	Vcc

CPU_FAN: CPU Fan Power Connector

Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

SYS_FAN: SYSTEM Fan Power Connector

Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

AUX_FAN: SYSTEM Fan Power Connector

Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

BIOS Setup

BIOS Introduction

The BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

The BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

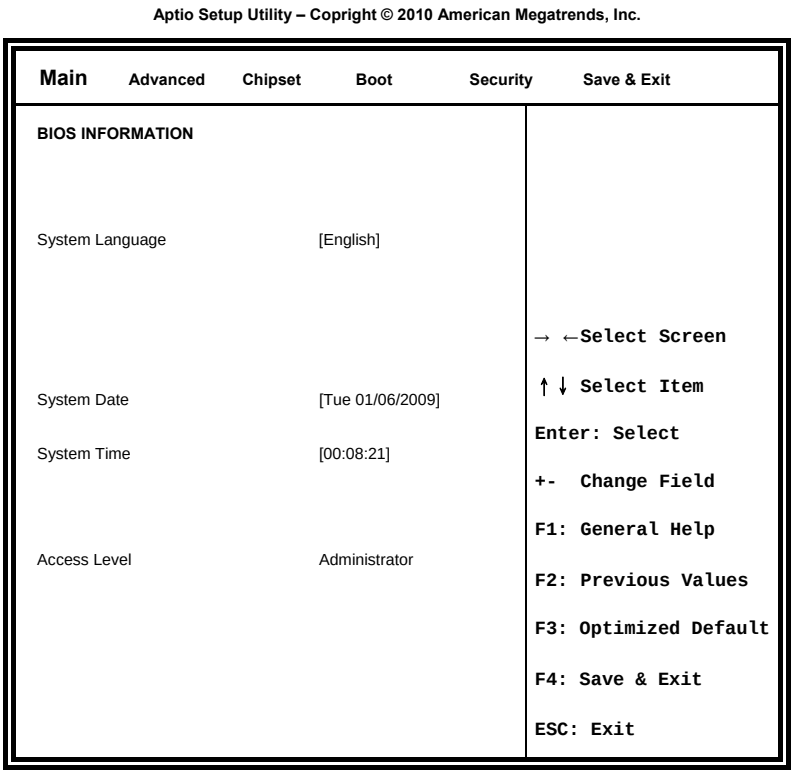
```
Press  <DEL> or <F2> to  Enter  Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen.
The Main Menu allows you to select from various setup functions and exit choices.

Main BIOS Setup

This setup allows you to record some basic hardware configurations in your computer system and set the system clock.



***Note**:* *If the system cannot boot after making and saving system changes with Setup, the AMI BIOS supports an override to the CMOS settings that resets your system to its default.*

Warning: *It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.*

System Language

Choose the system default language.

System Date

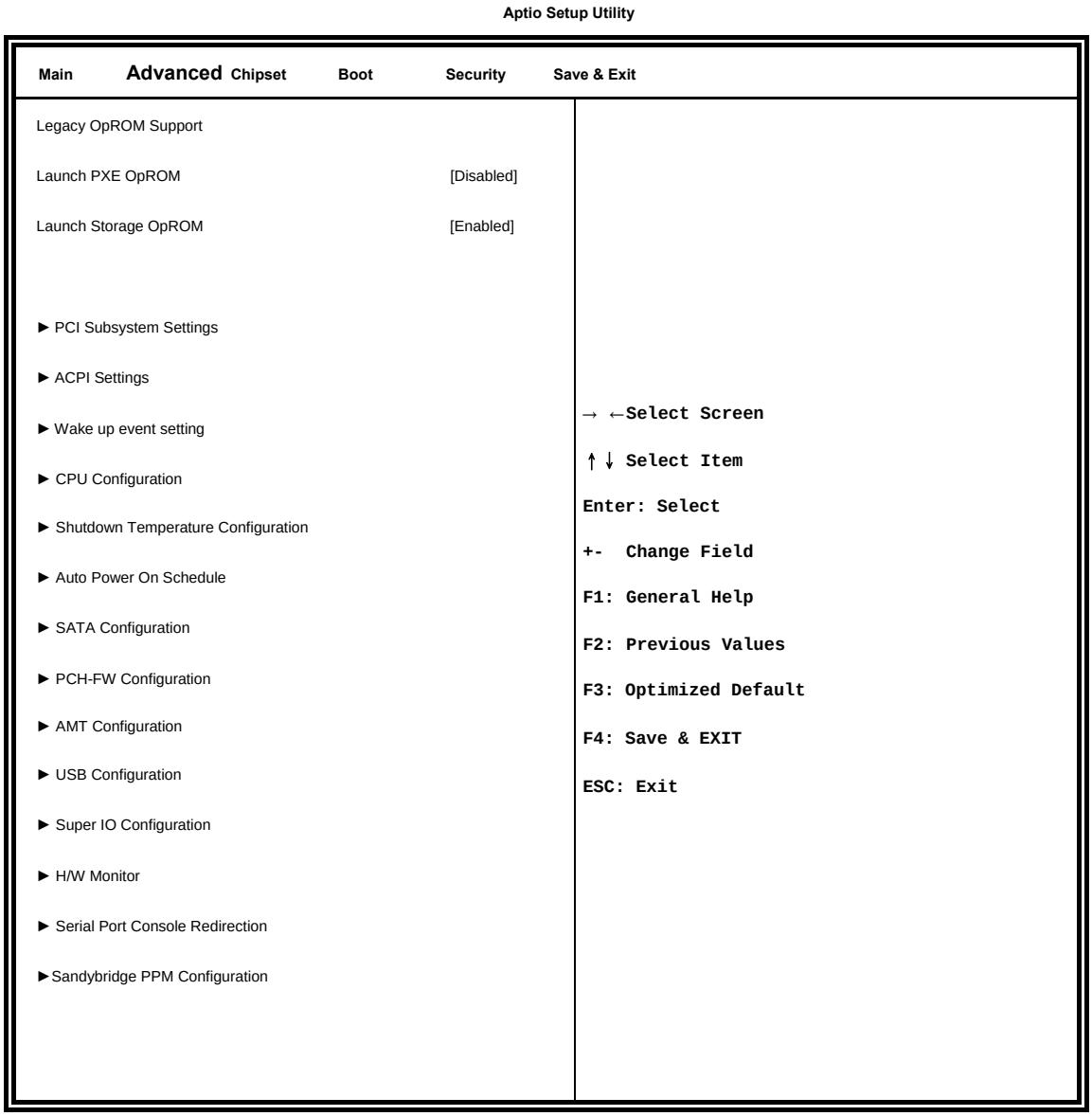
Set the Date. Use Tab to switch between Data elements.

System Time

Set the Time. Use Tab to switch between Data elements.

Advanced Settings

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



Launch PXE OpROM

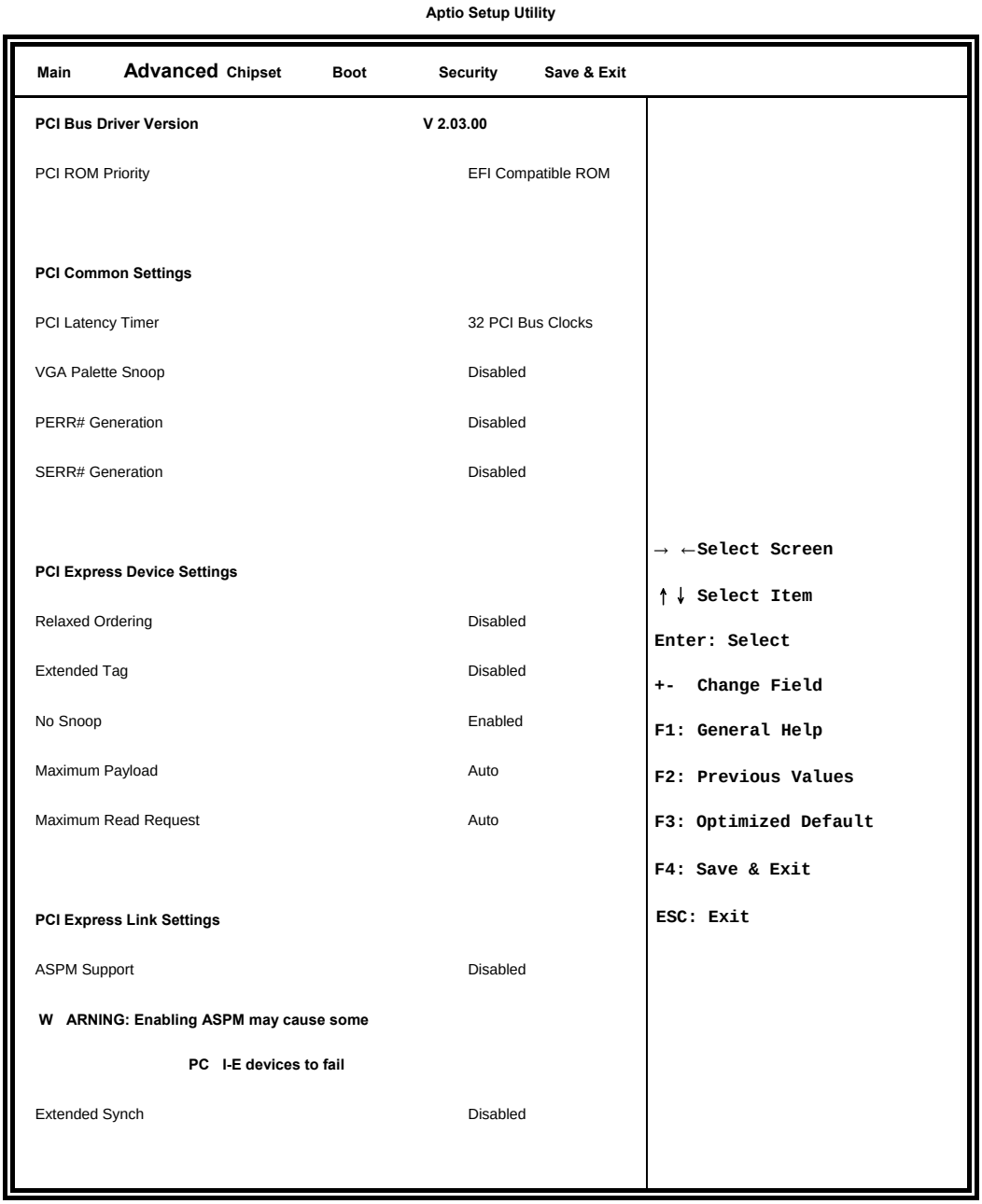
Enable or Disable Boot Option for Legacy Network Devices.

Launch Storage OpROM

Enable or Disable Boot Option for Legacy Mass Storage Devices with Option ROM.

PCI Subsystem Settings

This section allows you to configure the PCI, PCI-X and PCI Express settings.



PCI ROM Priority

In case of multiple Option ROMs (Legacy and EFI Compatible), specifies what PCI Option ROM to launch.

PCI Latency Timer

Value to be programmed into PCI Latency Timer Register.

VGA Palette Snoop

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

Set Maximum Read Request Size of PCI Express Device or allow System BIOS to select the value.

ASPM Support

Set the ASPM Level: Force L0- Force all links to L0 Stage:

AUTO – BIOS auto configure:

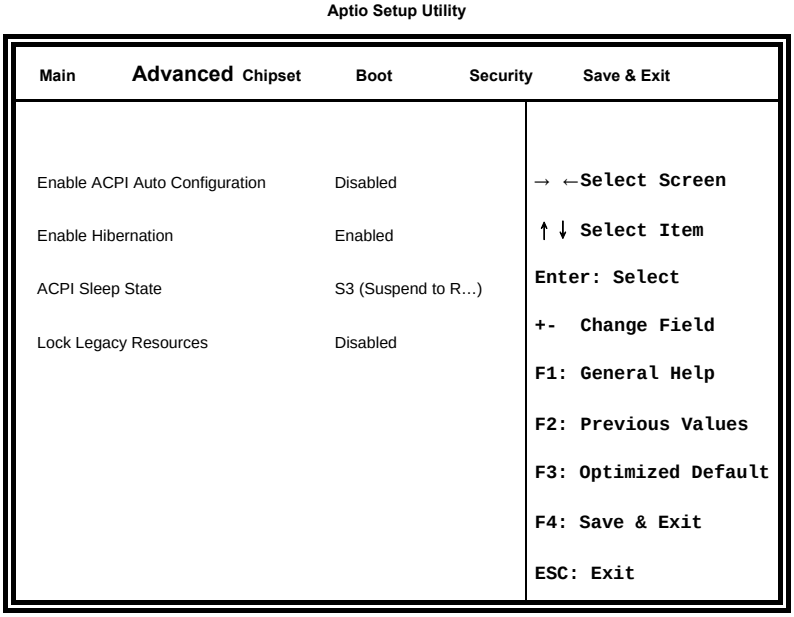
DISABLE- Disables ASPM.

Extended Synch

If ENABLED allows generation of Extended Synchronization patterns.

ACPI Settings

System ACPI Parameters.



Enable 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

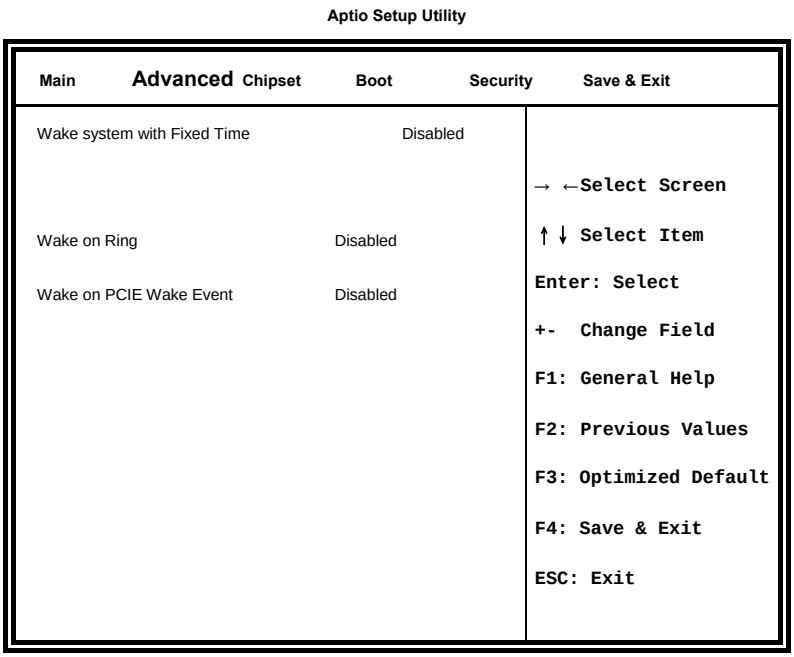
Select the highest ACPI sleep state the system will enter, when the SUSPEND button is pressed.

Lock Legacy Resources

Enables or Disables System Lock of Legacy Resources.

Wake up event settings

Enable/Disable Wake up event.



Wake system with Fixed Time

Enables or Disables System wake on alarm event. When enabled, System will wake on the hr::min:: sec specified.

Wake on Ring

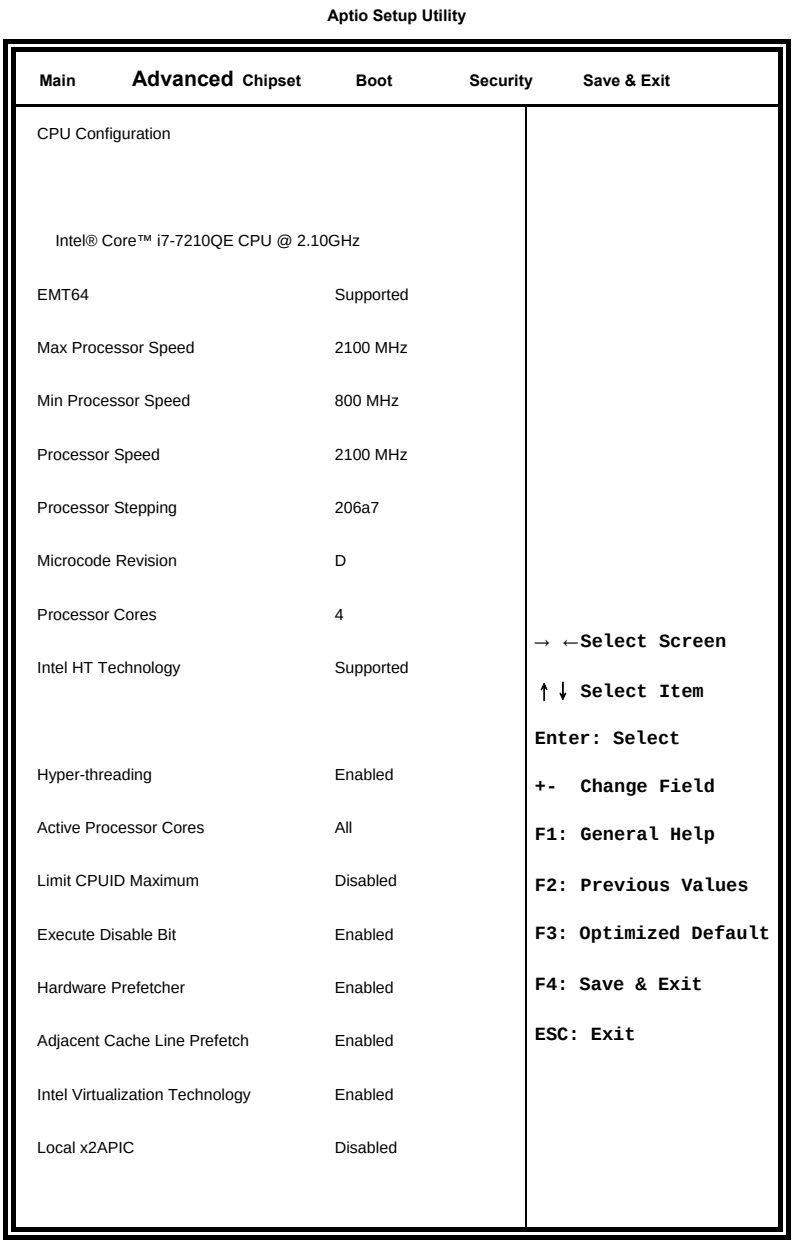
The options are Disabled and Enabled.

Wake on PCIE Wake Event

The options are Disabled and Enabled.

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

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

To turn on/off the MLC streamer prefetcher.

Adjacent Cache Line Prefetch

To turn on/off prefetching of adjacent cache lines.

Intel Virtualization Technology

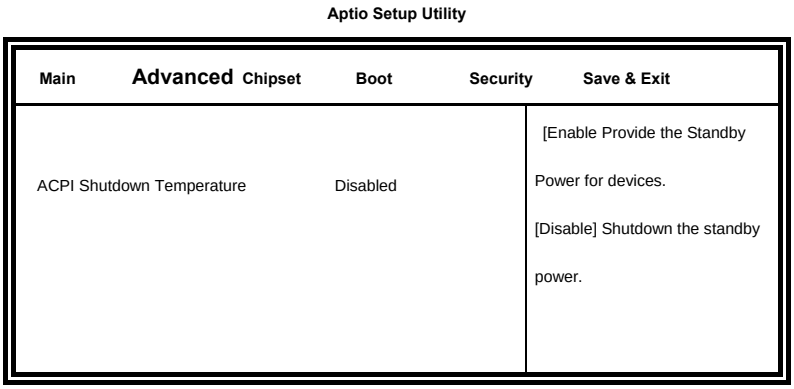
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology

Local x2APIC

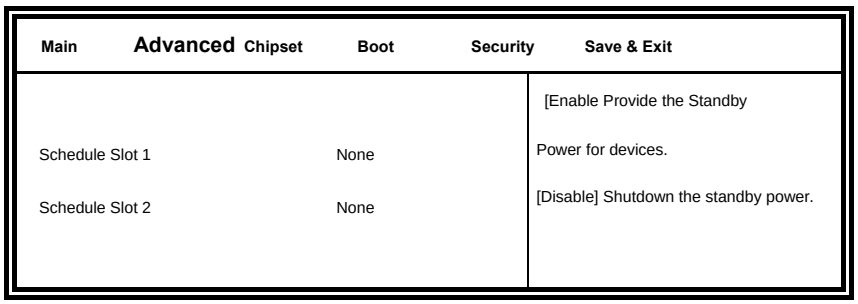
Enable Local x2APIC. Some OSes do not support this.

Shutdown Temperature Configuration

The default setting is Disabled.



Auto Power On Schedule



Schedule Slot 1

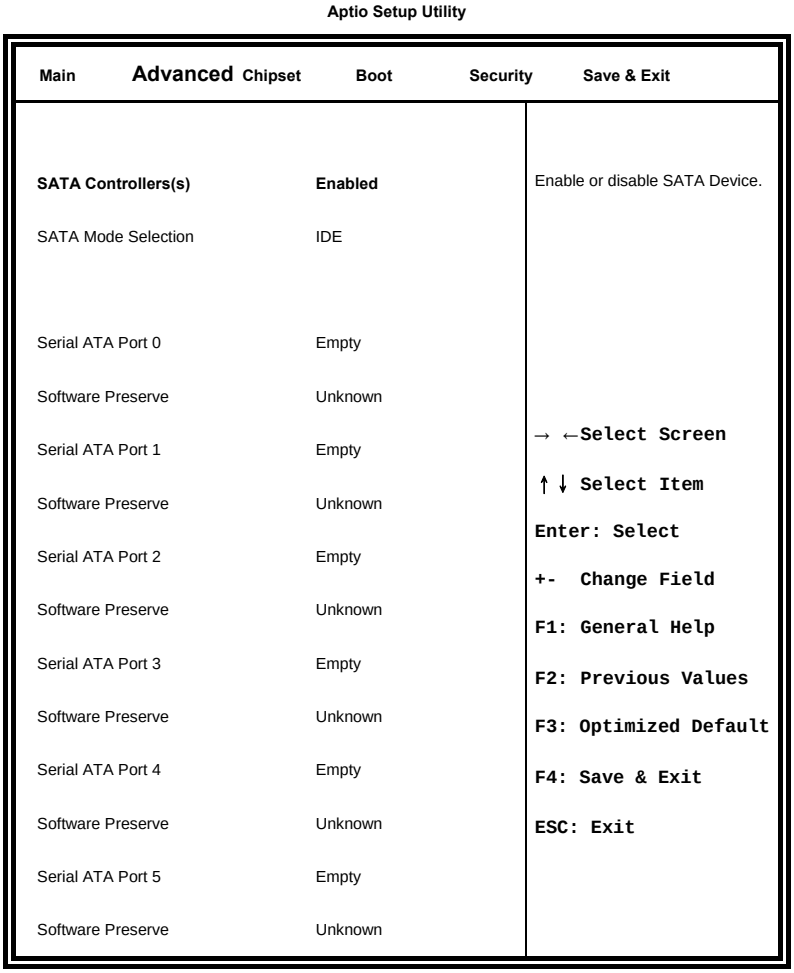
Setup the hour/minute for system power on.

Schedule Slot 2

Setup the hour/minute for system power on.

SATA Configuration

SATA Device Options Settings

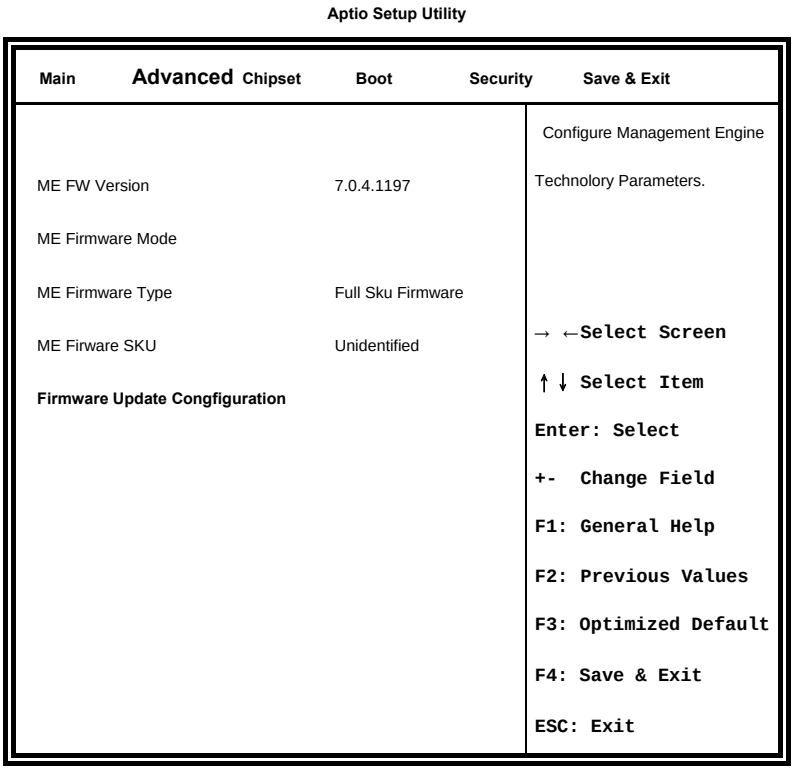


SATA Mode

Determines how SATA controllers(s) operate. The options are IDE, AHCI and RAID.

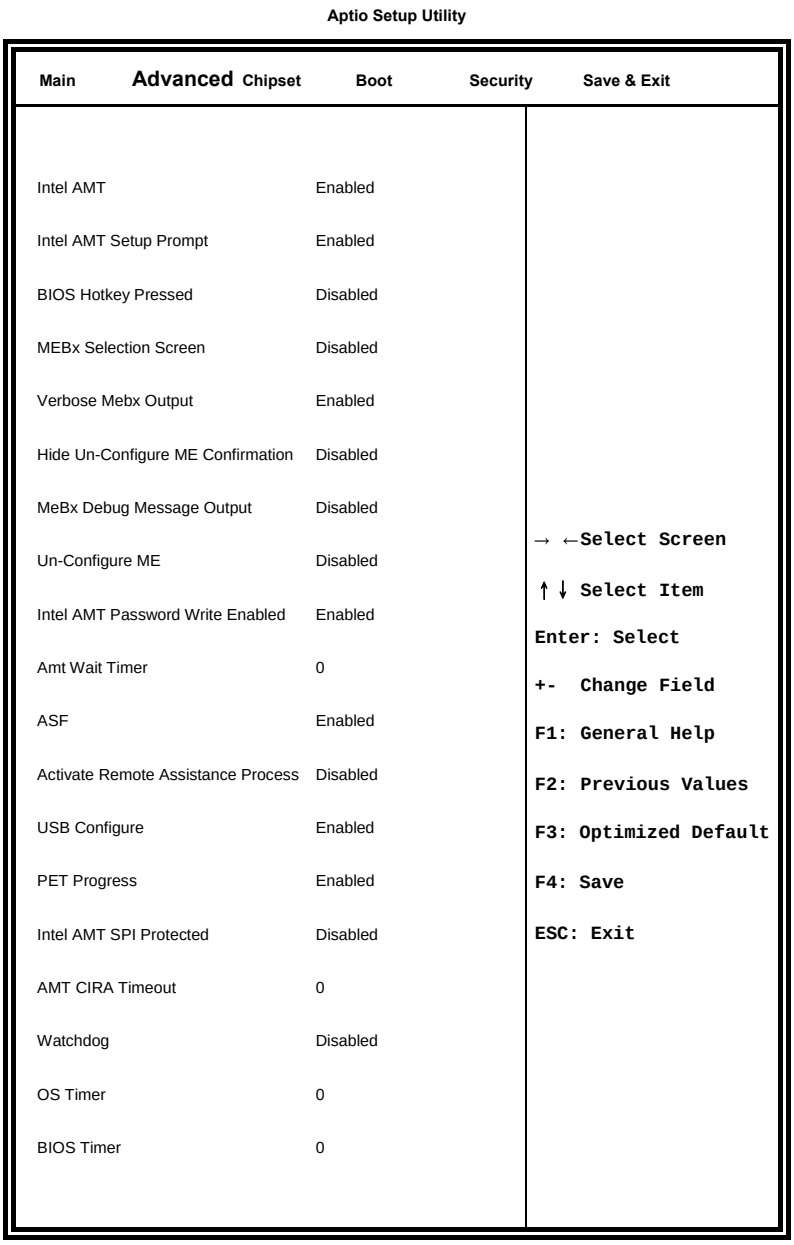
PCH-FW Configuration

Configure Management Engine Technology Parameters.



AMT Configuration

Configure Active Management Technology Parameters.



Intel AMT

Enable/Disable Intel® Active Management Technology BIOS Extenstion. Note: iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device.

Intel AMT Setup Prompt

OEMFLag Bit 0:

Enable/Disable Intel AMT Setup Prompt to wait for hot-key to enter setup.

BIOS Hotkey Pressed

OEMFLag Bit 1:

Enable/Disable BIOS hotkey press.

MeBx Selection Screen

OEMFLag Bit 2:

Enable/Disable MEBx selection screen.

Verbose Mebx Output

OEMFLag Bit 3:

Enable/Disable Verbose Mebx Output.

Hide Un-Configure ME Confirmation

OEMFLag Bit 6:

Hide Un-Configure ME without password Confirmation Prompt.

MeBx Debug Message Output

OEMFLag Bit 14:

Enable MEBx debug message output.

Un-Configure ME

OEMFLag Bit 15:

Un-Configure ME without password.

Intel AMT Password Write Enabled

Enable/Disable Intel AMT Password Write. Password is writeable when set Enable.

Amt Wait Timer

Set timer to wait before sending ASF_GET_BOOT_OPTIONS.

ASF

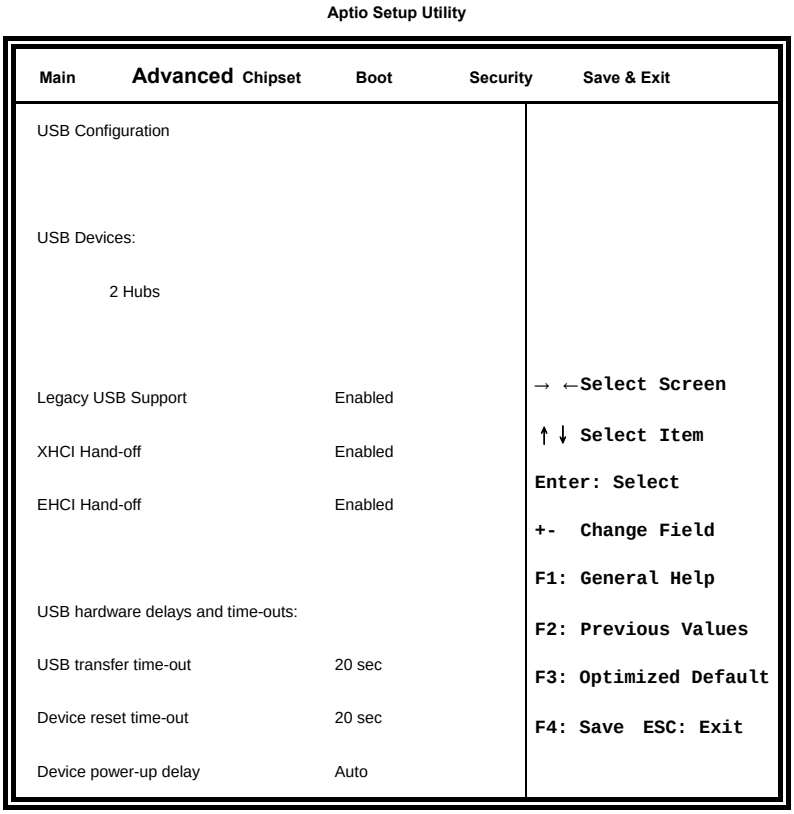
Enable/Disable Alert Specification Format.

Activate Remote Assistance Process

Trigger CIRA boot.

USB Configuration

USB Configuration Parameters.



Legacy USB Support

Enables Legacy USB support.

AUTO option disables legacy support if no USB devices are connected.

DISABLE option will keep USB devices available only for EFI applications.

XHCI Hand-off

This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

EHCI Hand-off

This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

USB transfer time-out

The time-out value for Control, Bulk, and Interrupt transfers.

Device reset time-out

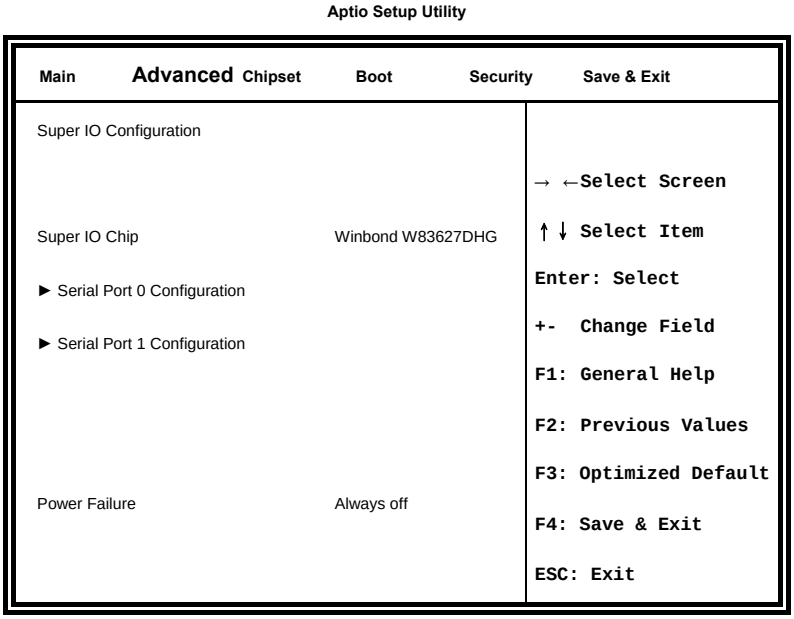
USB mass storage device Start Unit command time-out.

Device power-up delay

Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a hub port the delay is taken from Hub Descriptor.

Super IO Configuration

System Super IO Chip Parameters.



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.

Power Failure

Options are:

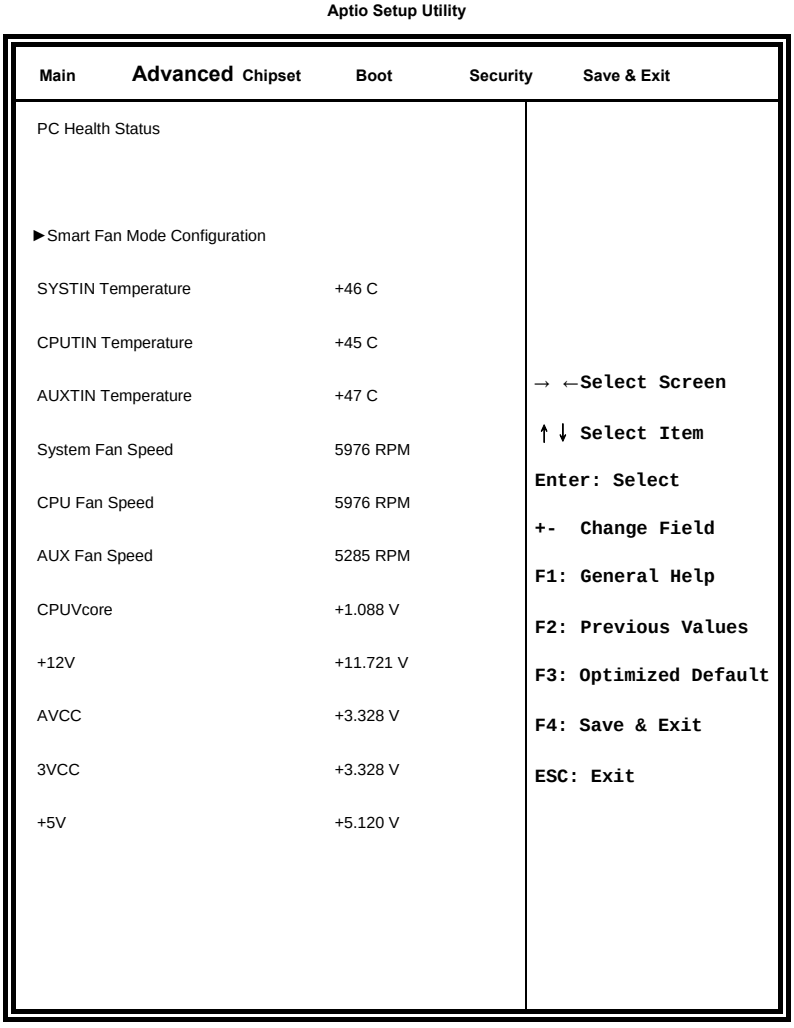
Keep last state

Always on

Always off (default)

H/W Monitor

Monitor hardware status.



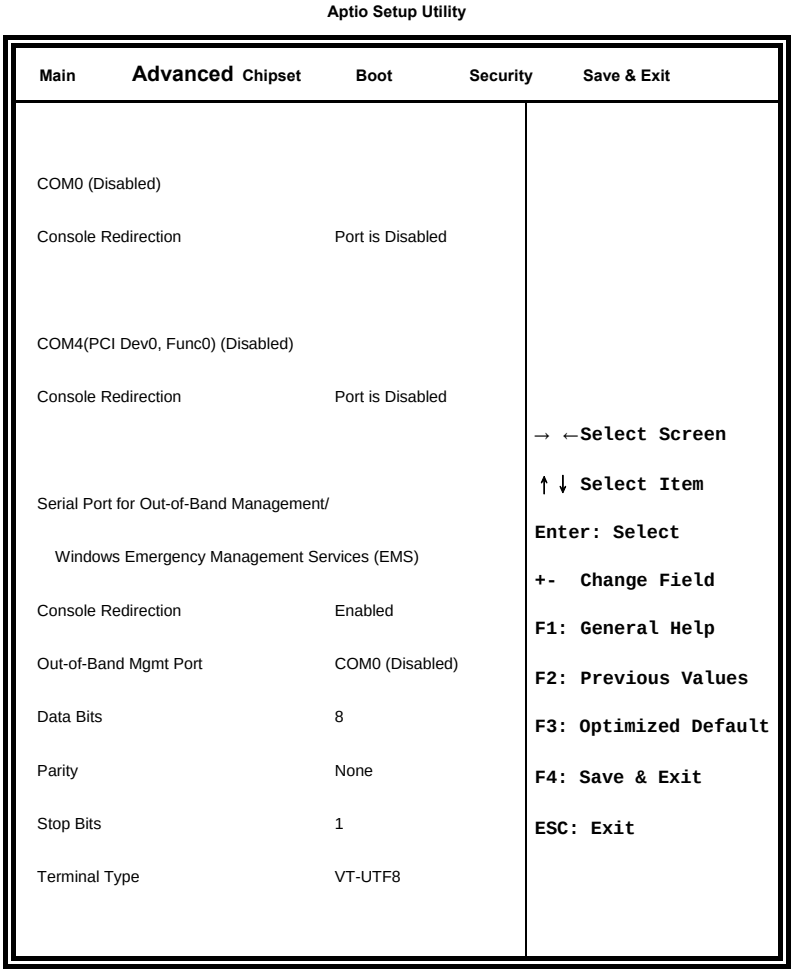
Temperatures/Voltages

These fields are the parameters of the hardware monitoring function feature of the motherboard. The values are read-only values as monitored by the system and show the PC health status.

Smart Fan Mode Configuration

This field enables (55C/60C/65C/70C) 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.

Serial Port Console Redirection



Console Redirection

Console Redirection Enable/Disable.

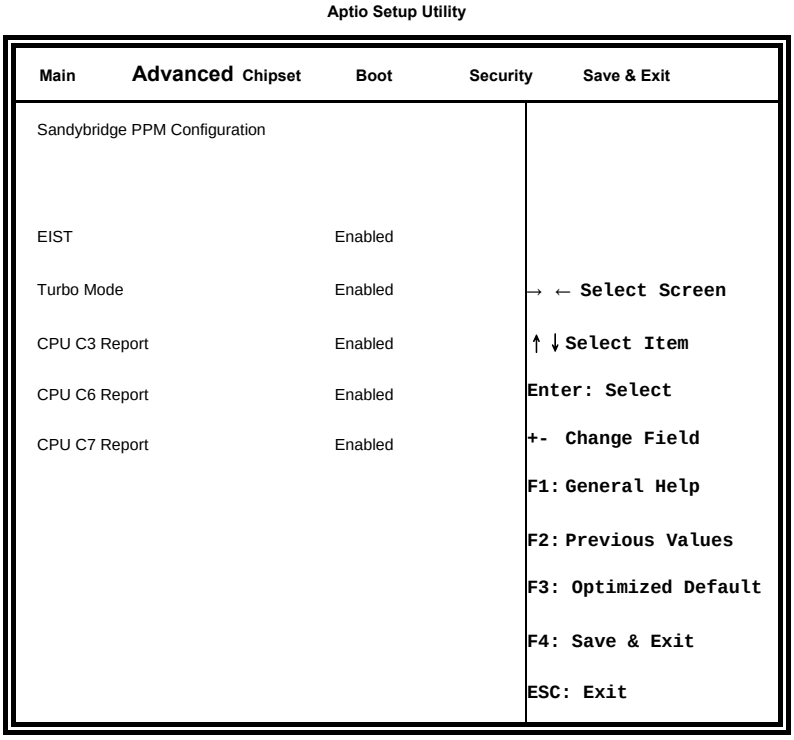
Out-of-Band Mgmt Port

Microsoft Windows Emergency Management Services (EMS) allows for remote management of a Windows Server OS through a serial port.

Terminal Type

VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100.

Sandybridge PPM Configuration



EIST

Enable/Disable Intel SpeedStep.

Turbo Mode

Turbo Mode.

CPU C3 Report

Enable/Disable CPU C3 (ACPI C2) report to OS.

CPU C6 Report

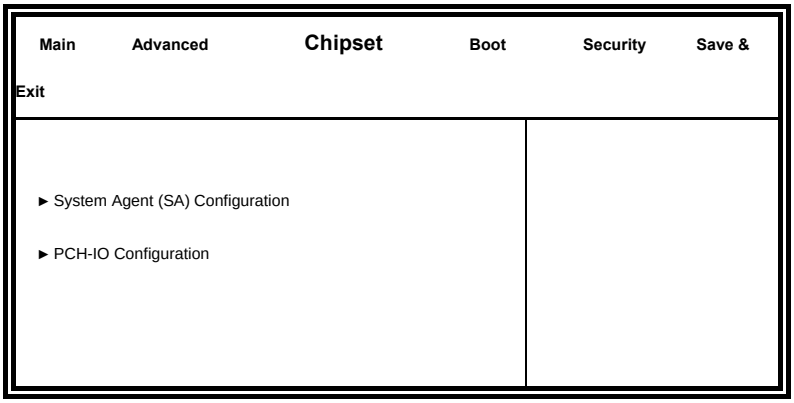
Enable/Disable CPU C6 (ACPI C3) report to OS.

CPU C7 Report

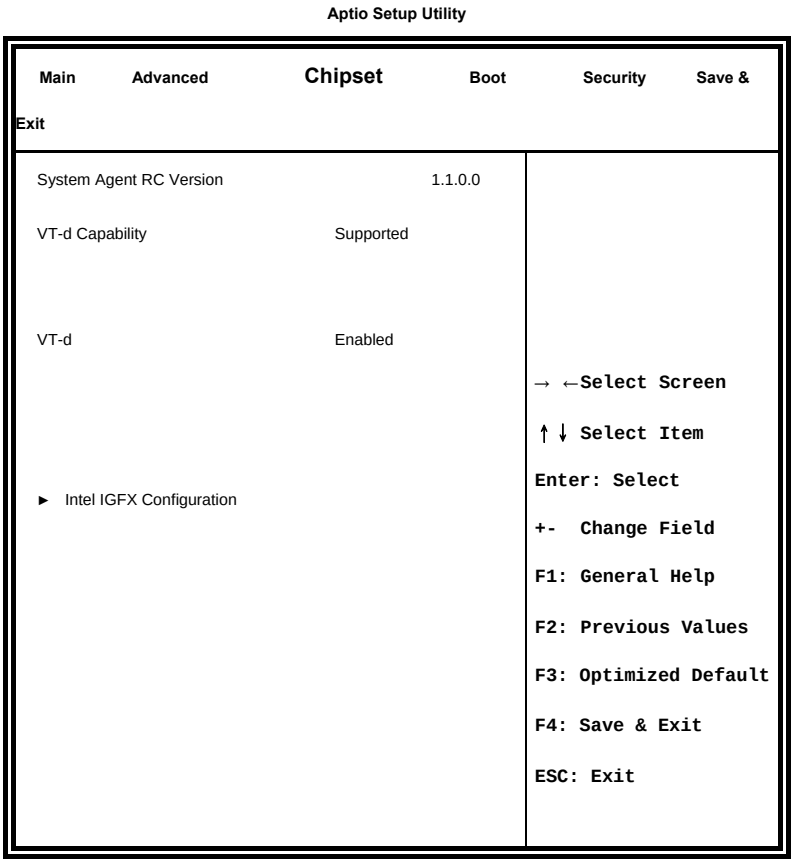
Enable/Disable CPU C7 (ACPI C3) report to OS.

Chipset Settings

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



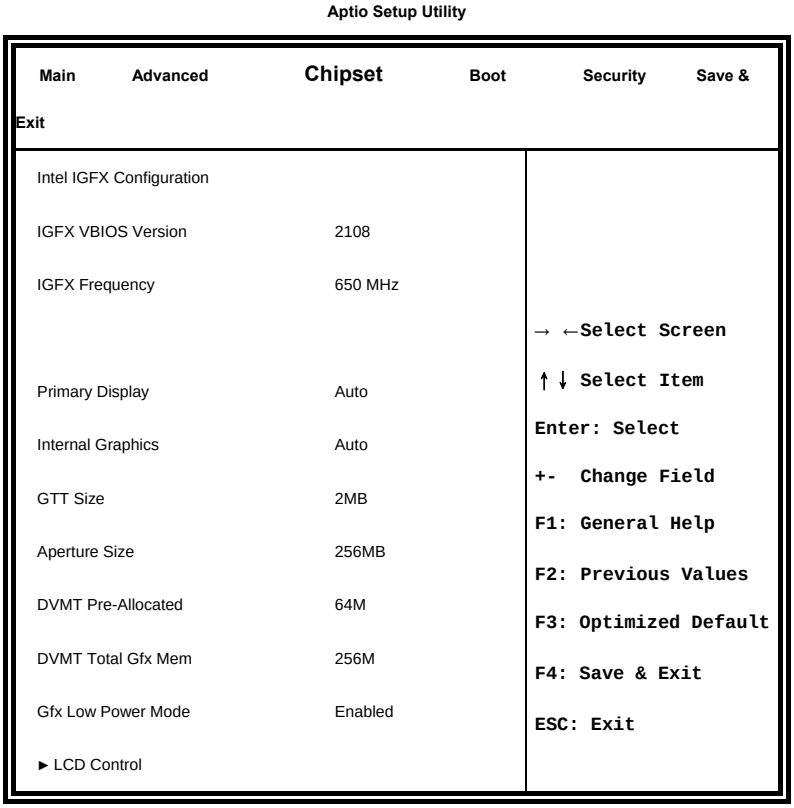
System Agent (SA) Configuration



VT-d

Check to enable VT-d function on MCH.

Intel IGFX Configuration



Primary Display

Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.

Internal Graphics

Keep IGD enabled based on the setup options.

GTT Size

Select the GTT Size: 1MB, 2MB.

Aperture Size

Select the Aperture Size: 128MB, 256MB, 512MB.

DVMT Pre-Allocated

Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device: 0M~512M.

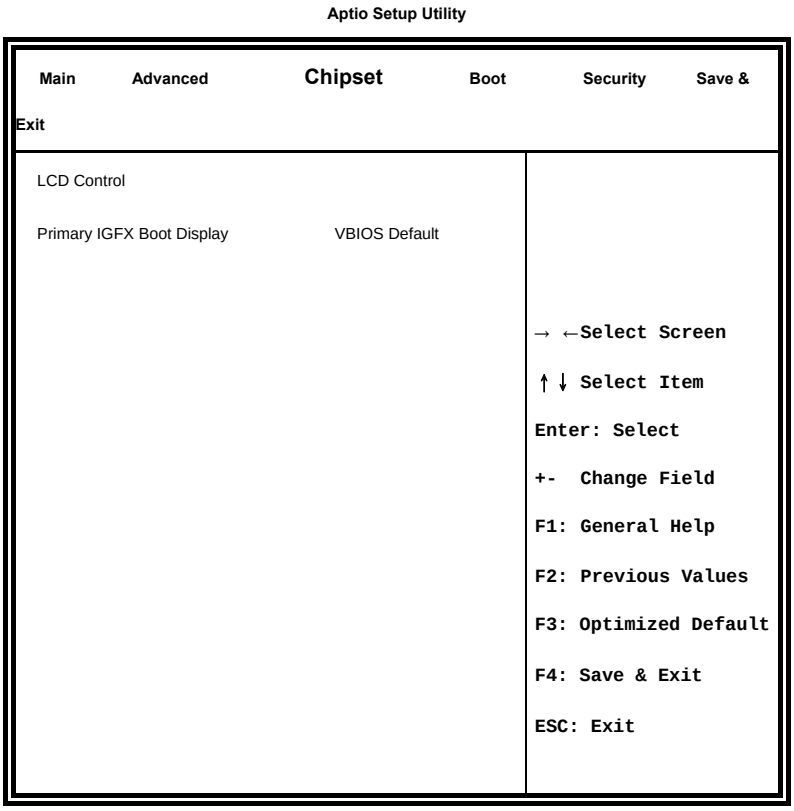
DVMT Total Gfx Mem

Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device: 128M, 256M, MAX.

Gfx Low Power Mode

This option is applicable for SFF only.

LCD Control

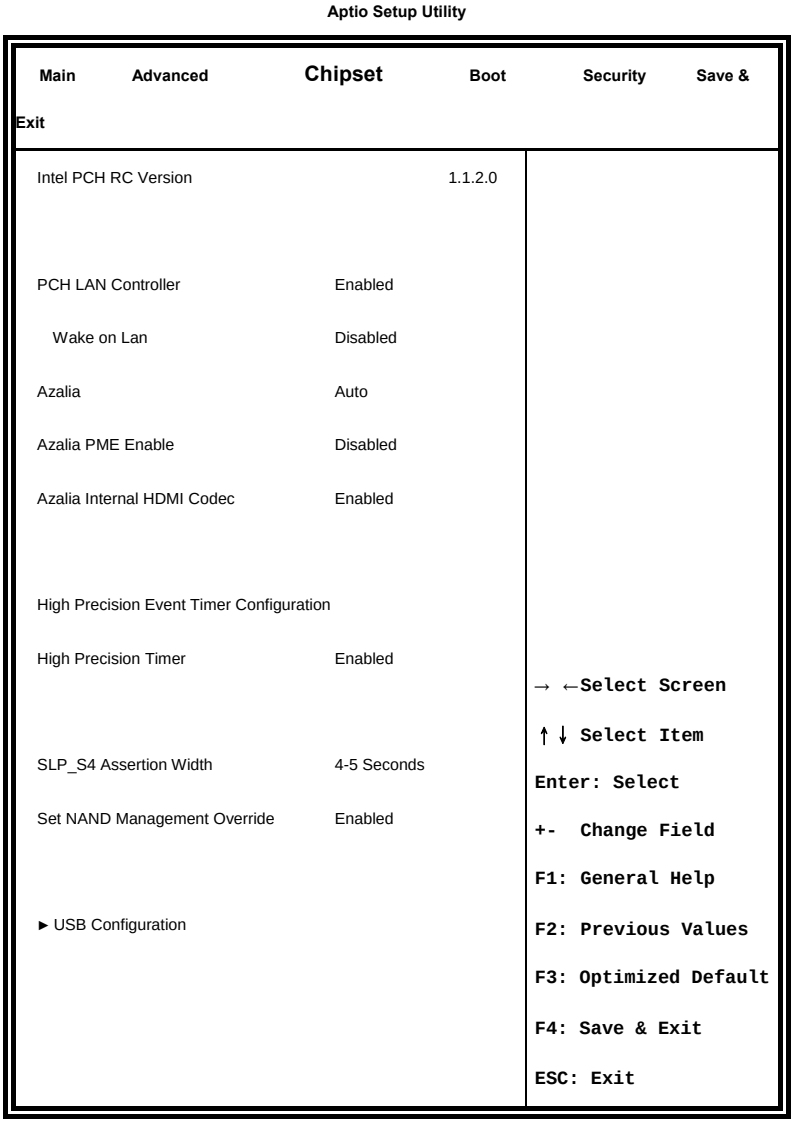


Primary IGFX Boot Display

Select the Video Device that will be activated during PoST. This has no effect if external graphics present.

Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display.

PCH-IO Configuration



Azalia

Control Detection of the Azalia device.

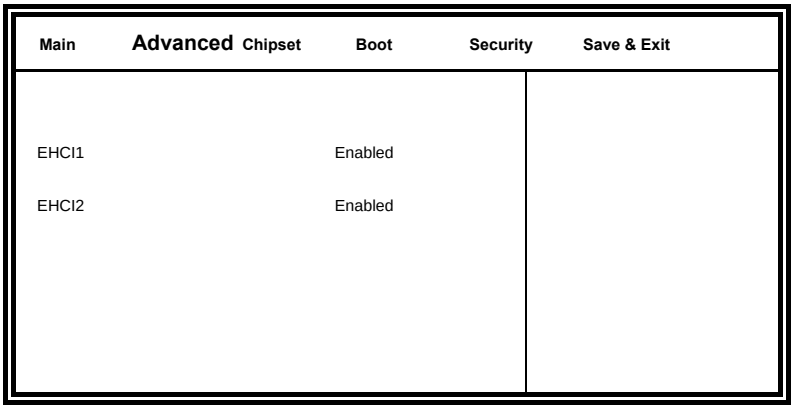
Disabled = Azalia will be unconditionally disabled.

Enabled = Azalia will be unconditionally enabled. Auto = Azalia will be enabled if present, disabled otherwise.

Set NAND Management Override

Option to Override NAND Management to allow driver or 3rd parties software to configure the NAND module after POST.

USB Configuration



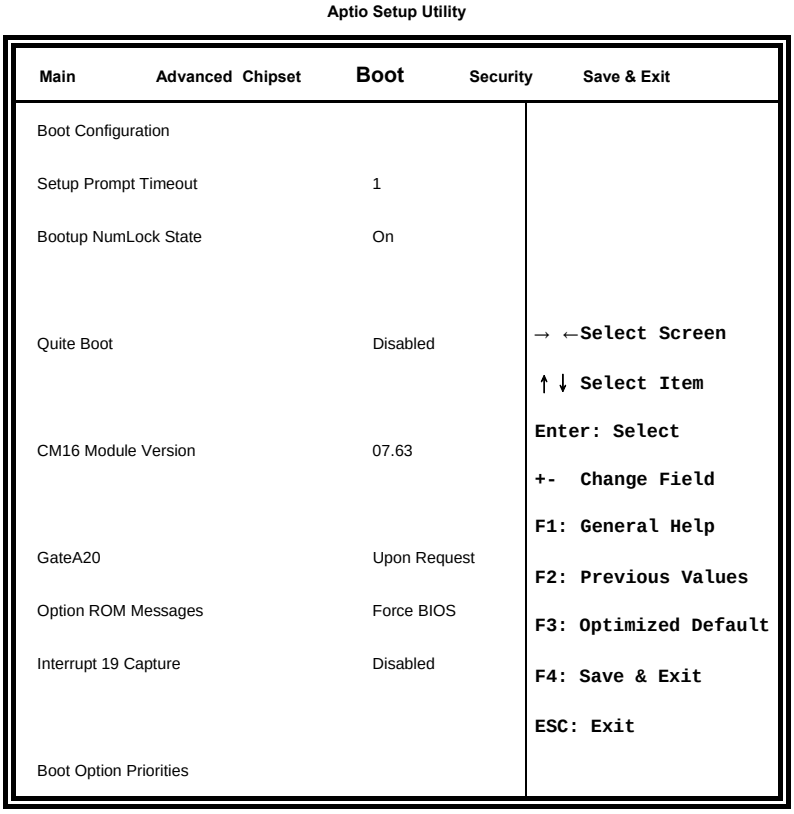
EHCI1

Control the USB EHCI (USB2.0) functions.

One EHCI controller must always be enabled.

Boot Settings

This section allows you to configure the boot settings according to your preference.



Setup Prompt Timeout

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

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.

Interrupt 19 Capture

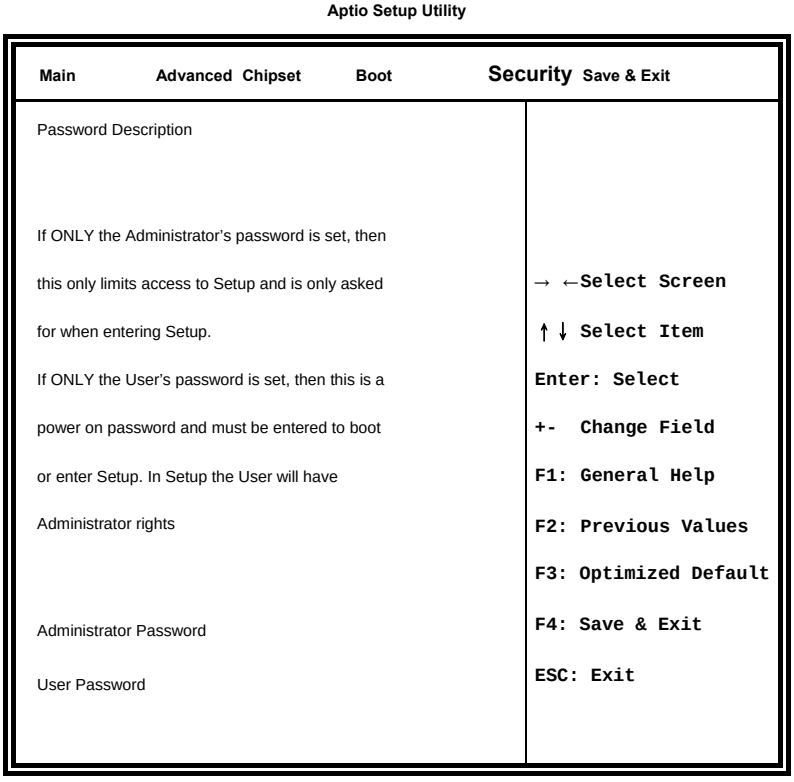
Enable: Allows Option ROMs to trap Int 19.

Boot Option Priorities

Sets the system boot order.

Security Settings

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



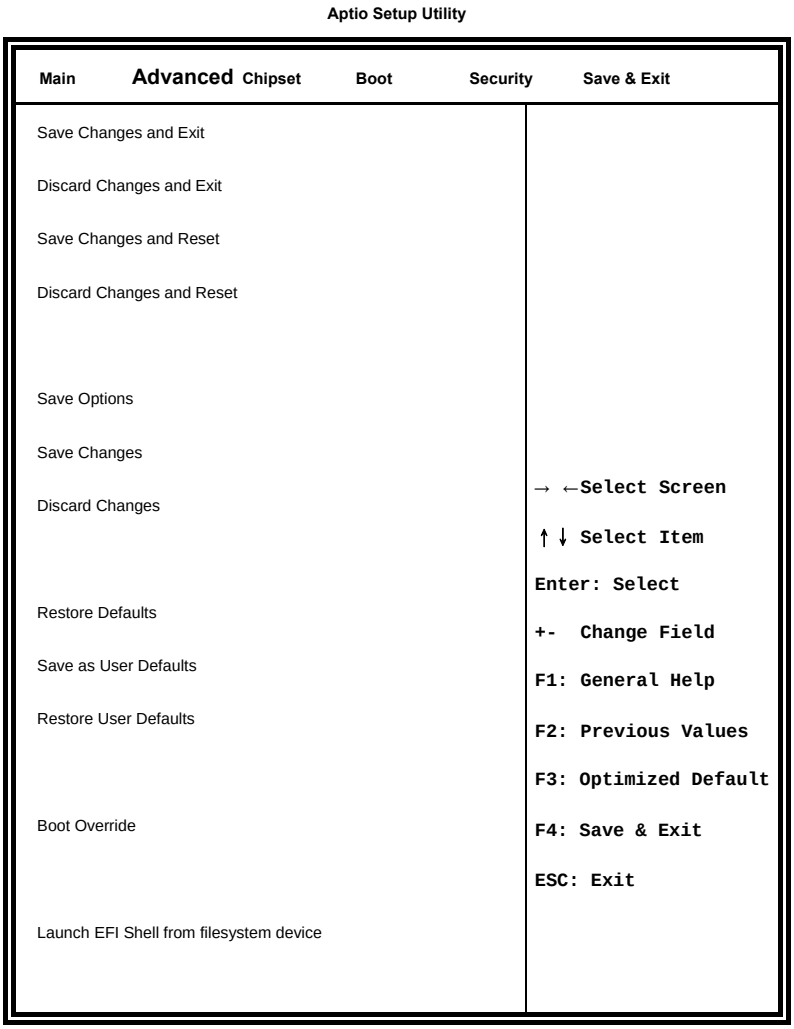
Administrator Password

Set Setup Administrator Password.

User Password

Set User Password.

Save & Exit Settings



Save Changes and Exit

Exit system setup after saving the changes.

Discard 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.

Boot Override

Pressing ENTER causes the system to enter the OS.

Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shellx64.efi) from one of the available filesystem devices.

Drivers Installation

This section describes the installation procedures for software and drivers. The software and drivers are included with the motherboard. If you find the items missing, please contact the vendor where you made the purchase. The contents of this section include the following:

IMPORTANT NOTE:

After installing your Windows operating system, you must install first the Intel Chipset Software Installation Utility before proceeding with the drivers installation.

Intel Chipset Software Installation Utility

The Intel Chipset Drivers should be installed first before the software drivers to enable Plug & Play INF support for Intel chipset components. Follow the instructions below to complete the installation.

1. Insert the CD that comes with the board. Click ***Intel*** and then ***Intel(R) QM67/Q67 Chipset Drivers***.

2. Click ***Intel(R) Chipset Software Installation Utility.***

3. When the Welcome screen to the Intel® Chipset Device Software appears, click ***Next*** to continue.

4. Click ***Yes*** to accept the software license agreement and proceed with the installation process.

5. On the Readme File Information screen, click ***Next*** to continue the installation.

6. The Setup process is now complete. Click ***Finish*** to restart the computer and for changes to take effect.

VGA Drivers Installation

NOTE: Before installing the *Intel(R) QM67 Chipset Family Graphics Driver,* the Microsoft .NET Framework 3.5 SPI should be first installed.

To install the VGA drivers, follow the steps below.

1. Insert the CD that comes with the board. Click ***Intel*** and then ***Intel(R) QM67/Q67 Chipset Drivers***.

2. Click ***Intel(R) QM67 Chipset Family Graphics Driver.***

3. When the Welcome screen appears, click ***Next*** to continue.

4. Click ***Yes*** to to agree with the license agreement and continue the installation.

5. On the Readme File Information screen, click ***Next*** to continue the installation of the Intel® Graphics Media Accelerator Driver.

6. On Setup Progress screen, click ***Next*** to continue.

7. Setup complete. Click ***Finish*** to restart the computer and for changes to take effect.

Realtek HD Audio Driver Installation

Follow the steps below to install the Realtek HD Audio Drivers.

1. Insert the CD that comes with the board. Click ***Intel*** and then ***Intel(R) QM67/Q67 Chipset Drivers***.

2. Click ***Realtek High Definition Audio Driver.***

3. On the Welcome to the InstallShield Wizard screen, click ***Yes*** to proceed with and complete the installation process.

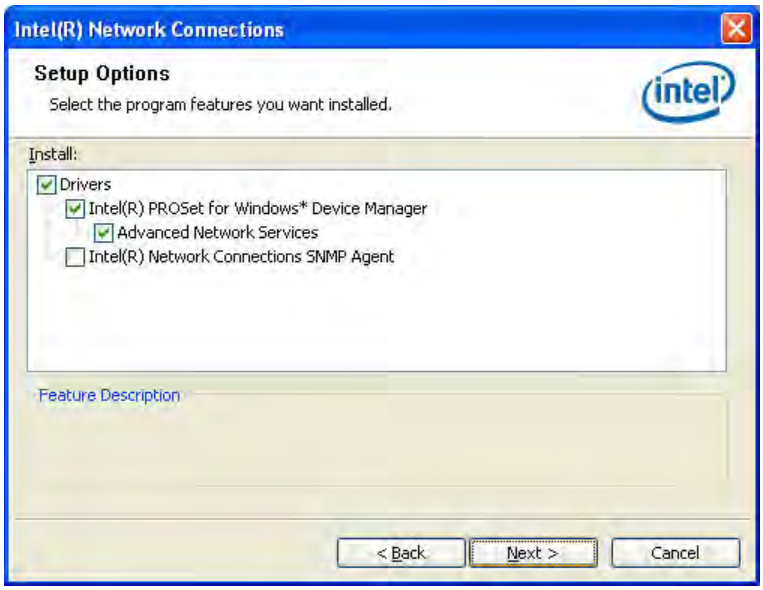
LAN Drivers Installation

1. Insert the CD that comes with the board. Click ***Intel*** and then ***Intel(R) QM67/Q67 Chipset Drivers***.

2. Click ***Intel(R) PRO LAN Network Driver.***

3. When the Welcome screen appears, click ***Next***. On the next screen, click ***Yes*** to to agree with the license agreement.

4. Click the checkbox for **Drivers** in the Setup Options screen to select it and click **Next** to continue.



5. The wizard is ready to begin installation. Click ***Install*** to begin the installation.

6. When InstallShield Wizard is complete, click ***Finish***.

Appendix

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. The following table lists the I/O port addresses used.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 064h	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
E000-E01F	Network Connection
F060-F07F	Network Connection
F080-F0D7	SATA Storage Controller
2F8h - 2FFh	Serial Port #2(COM2)
3B0h- 3BBh	Graphics adapter Controller
3F8h - 3FFh	Serial Port #1(COM1)
3D0h - 3DFh	CGA adapter