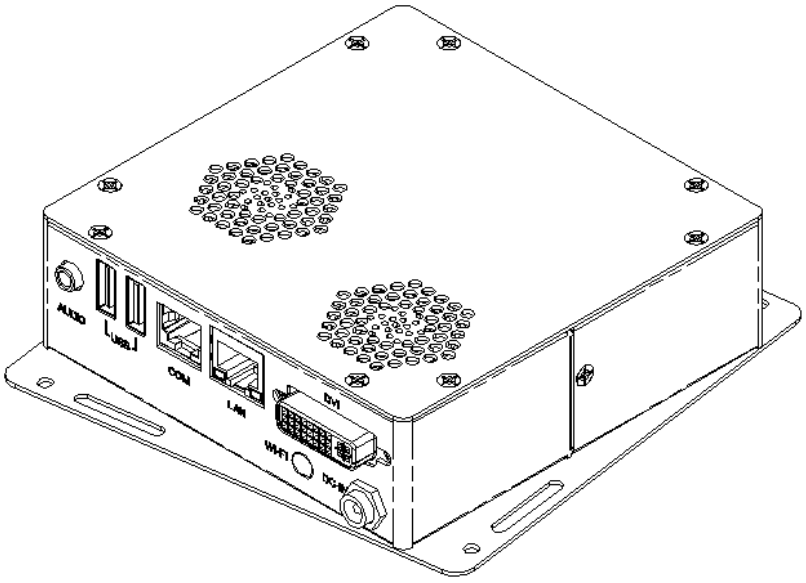
SI-18 Series

User Manual



Revision	Release Date
V0.1	2011/11/15
V0.2	2014/09/23
V0.3	2016/11/07

Table of Contents

Safety Information

Your SI-18 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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- AMD and ATI are registered trademarks of AMD Corporation.
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- FINTEK is a registered trademark of FINTEK Electronics Corporation.
- REALTEK is a registered trademark of REALTEK Electronics Corporation.
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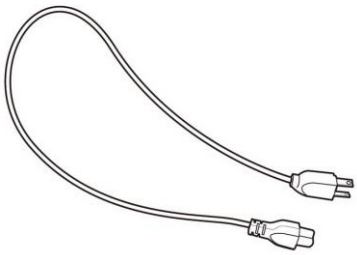
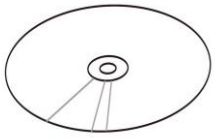
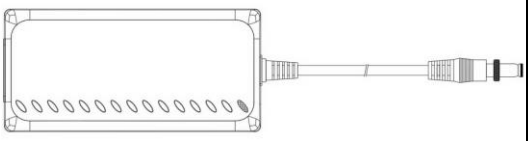
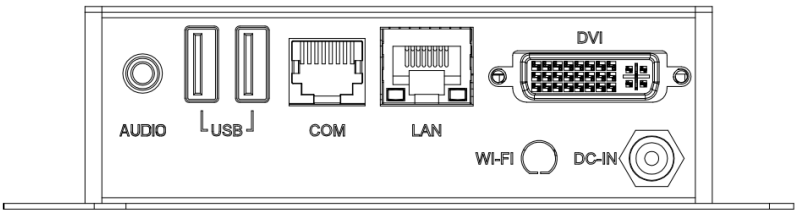
Accessories

	
a. Power Cord x 1	b. Driver CD x 1
	
c. Power Brick x 1	

Components

I/O View

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



DVI

The Digital Visual Interface (DVI) port supports a high quality VGA-compatible device such as a monitor or projector to allow viewing on a larger external display.

LAN

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

COM

Communication or serial port is compatible with RS-232 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

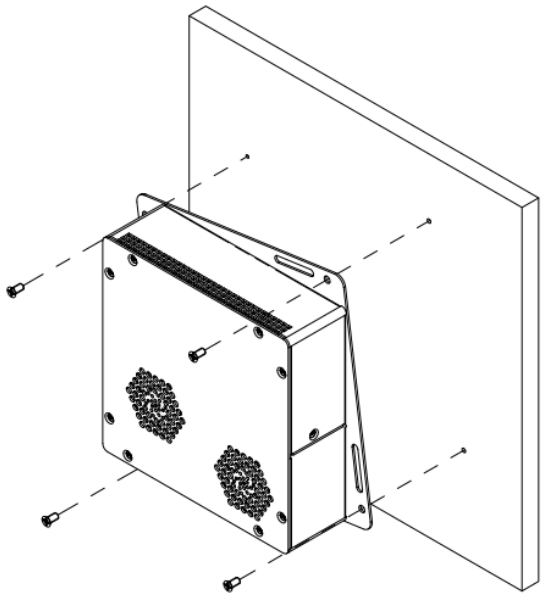
The supplied power adapter converts AC power to DC power for use with this jack. Power supplied through this jack supplies power to the system. To prevent damage to the system, always use the supplied power adapter.

Specification

System Mainboard	EB-900
Construction	SGCC 1.0t
Chassis Color	Black / White
Storage	2.5” 80GB SATA HDD x 1
Mounting	Wall mount
Dimensions	125.5(W) x 36(H) x 125.5(D)mm (4.94” x 1.41” x 4.94”)
Power Supply	60W 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
Certification	CE, FCC, CCC

·This specification is subject to change without prior notice.

Mounting SI-18 to the Wall



You can install SI-18 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-18 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

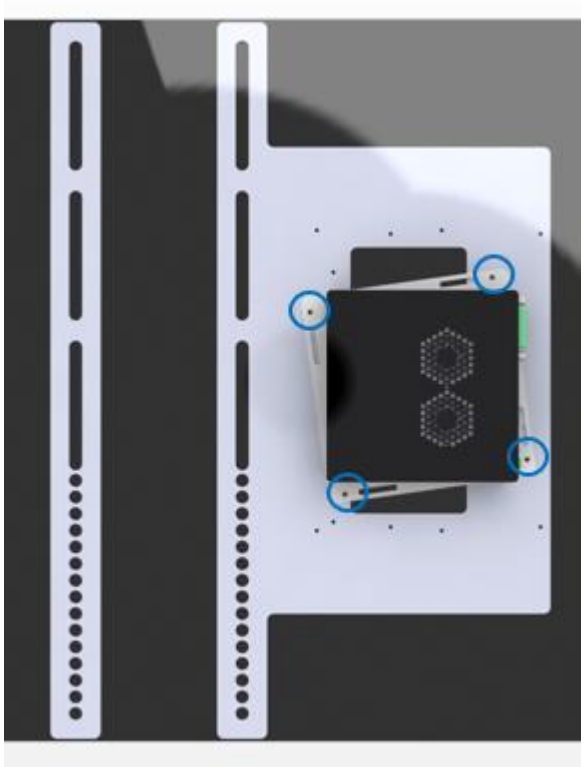
Plan the mounting location thoroughly. Locations such as walkway areas, hallways, and crowded areas are not recommended. Mount the unit to a flat, sturdy, structurally sound column or wall surface.

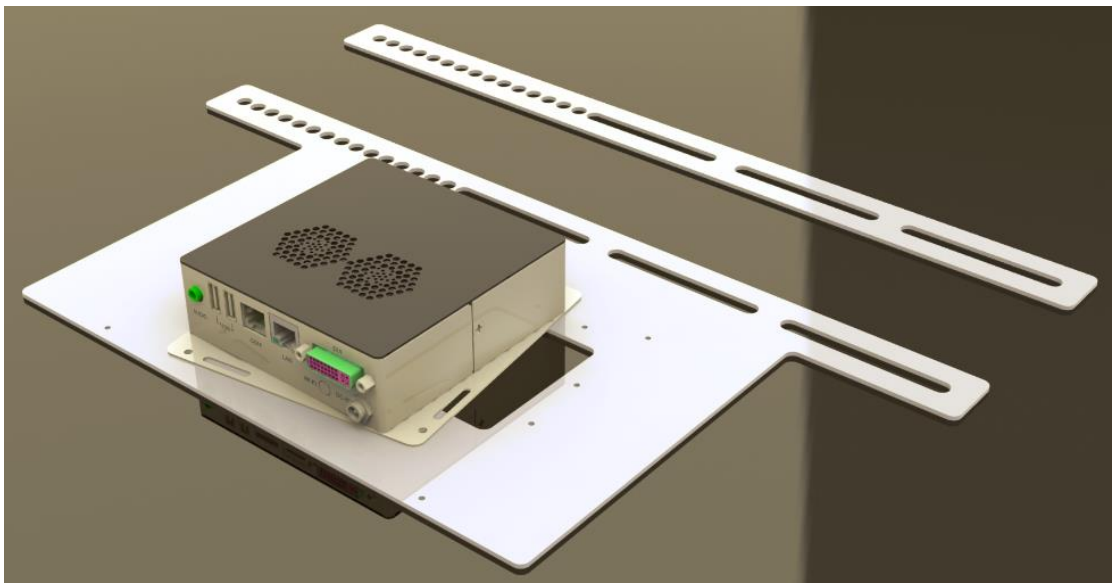
The best mounting surface is a standard countertop, cabinet, table, or other structure that is minimally the width and length of the unit. This recommendation reduces the risk that someone may accidentally walk into and damage the device. Local laws governing the safety of individuals might require this type of consideration.

SI-18 mounting bracket solution

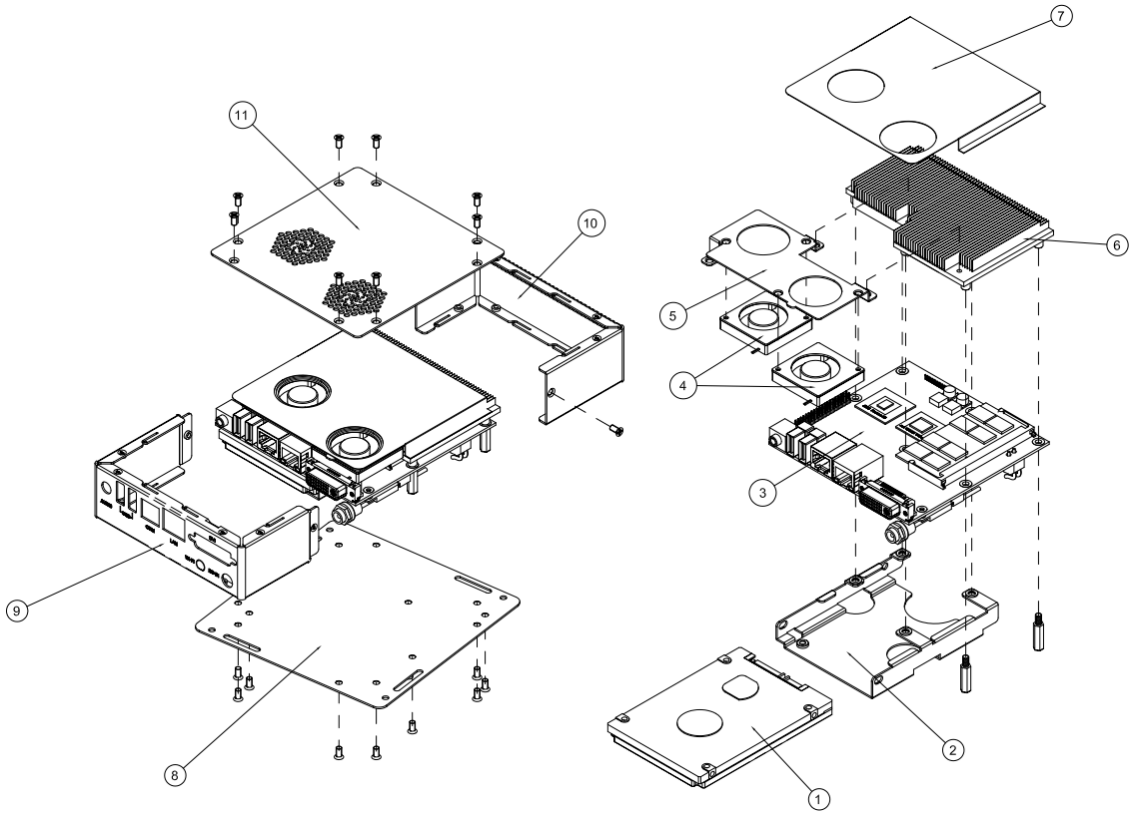
SI-18 mounting bracket (IBASE) part number: SC2SIMK1---0A1100P

Please install SI-18 to the mounting bracket using 4 screws, as shown in the picture.





Exploded view of the SI-18 assembly



Parts description

Part No.	Description	Part No.	Description
1	HDD	2	HDD bracket
3	EB900	4	FAN Set
5	Fan bracket	6	Heatsink
7	Fan Dock	8	Bottom Chassis / Mounting
9	Chassis Body – I/O	10	Chassis Body
11	Top cover		

Installation

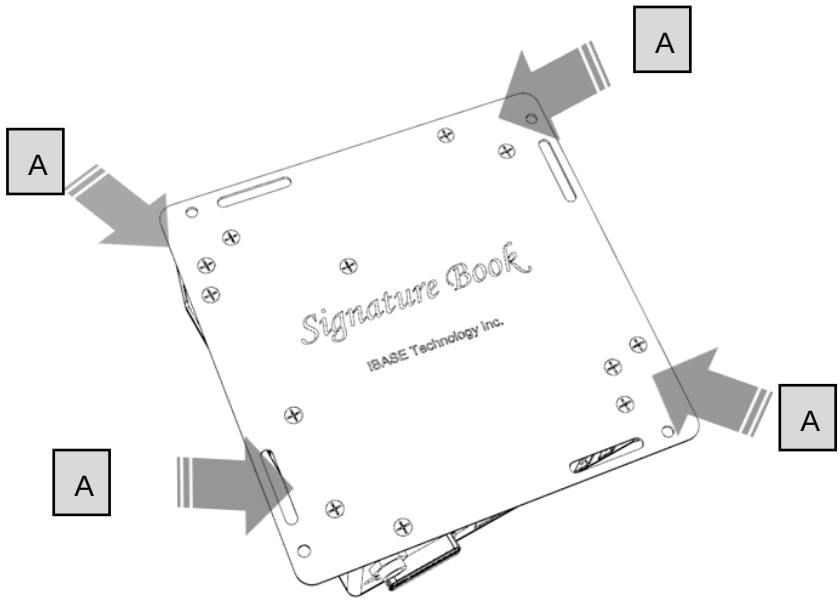
Installing WLAN antenna (Optional)

SI-18 has reserved one SMA connector hole for WLAN (wireless LAN) antenna connection on the I/O side. Only one antenna solution WLAN card can be used. For 802.11n solution, the speed would be up to 150Mbit/s. The WLAN set can be purchased through your sales representative. Follow the procedure below to install the WLAN card.

Before you install WLAN antenna and card, please do the following:

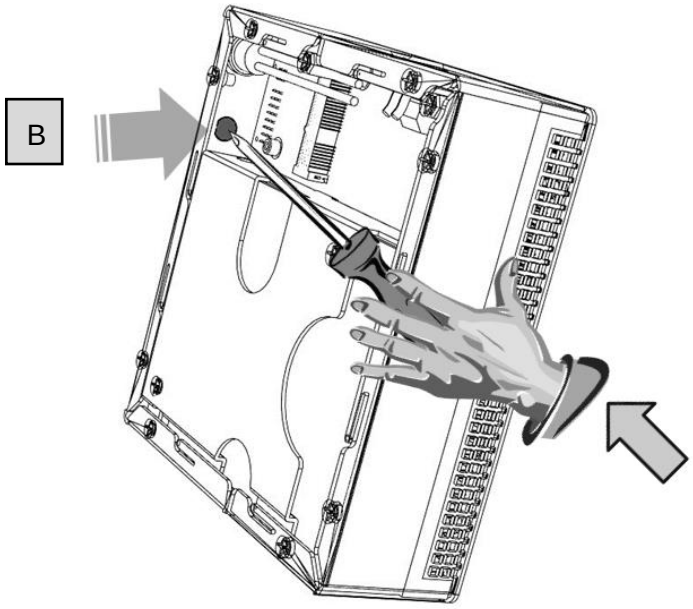
- Completely remove the DC power source from SI-18.
- Ensure you have good ESD protection and, if possible, wear ESD protection equipment and be well ‘grounded’.

1. Turn the SI-18 upside-down with the bottom side facing upward.
2. Remove all M3 screws from chassis (12 pieces) with a screwdriver from point A.

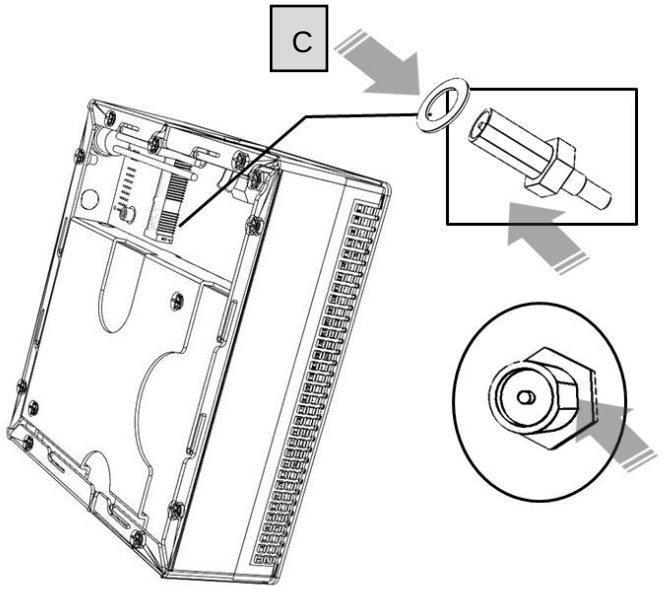


3. Rotate the SI-18 to let bottom side face you.

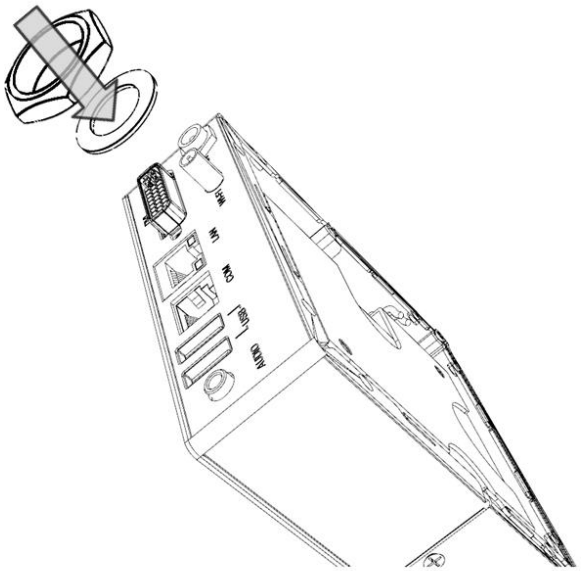
4. Use a screw driver to pinch out the knock-out metal-plate of the SMA antenna hole from point B. To avoid any metal falling into the system, pinch out the metal-cover with the same direction as shown in the following figure.



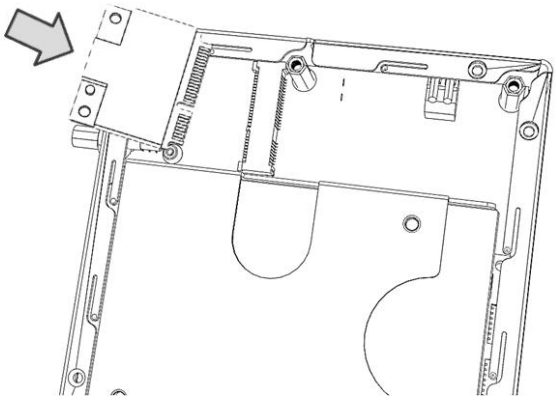
5. Hold WLAN antenna SMA head carefully and through the hole on I/O wall. Beware the direction of SMA head with the hole, there only has one direction can pass through the antenna hole. And there has one washer shall be put on head before through into the hole, point C.

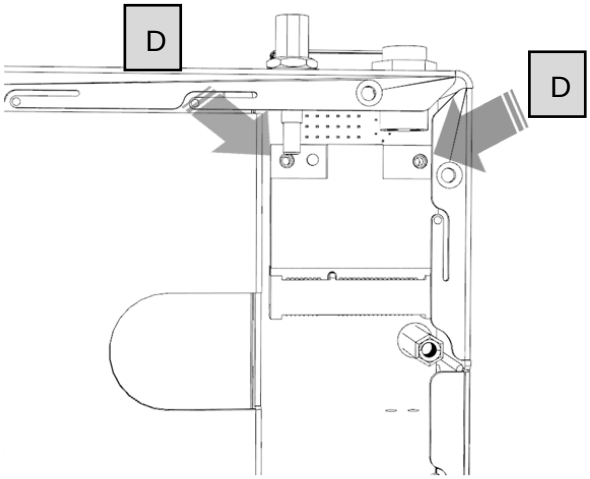


6. Install the antenna washer, then the hex nut on the SMA connector and use a hex socket driver or pliers to fix the nut and secure the SMA connector to the I/O wall.

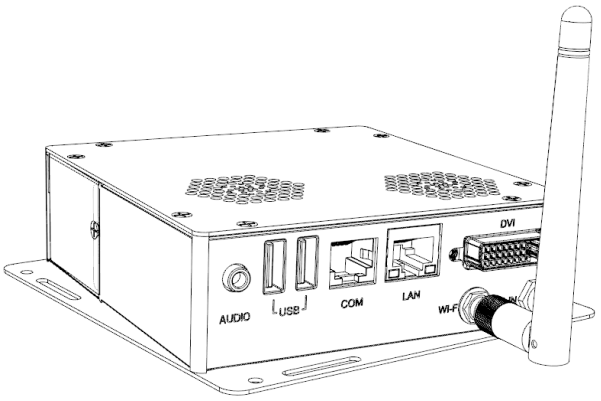


7. Install the WLAN card on the mini-PCIe connector and use the screw provided with the WLAN card to secure the WLAN card in position on point D.





8. Wire the IPX connector on WLAN card and arrange the internal antenna cable routing.
9. Screw the bottom chassis back to the system with 8 screws by referring to step number 2.



Installing the memory

The mainboard supports two DDR3 memory socket for a maximum total memory of 4GB in DDR3 memory type.

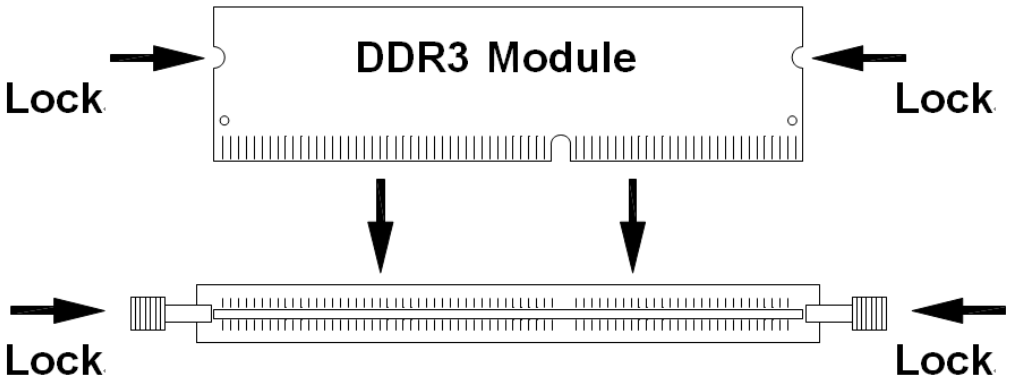
Installing and Removing Memory Module (CN1)

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 those on the memory slot.

2. Gently push the DDR3 module in SOCKET position until the clips of the slot close to hold the DDR3 module in place when the DDR3 module touches the bottom of the slot.

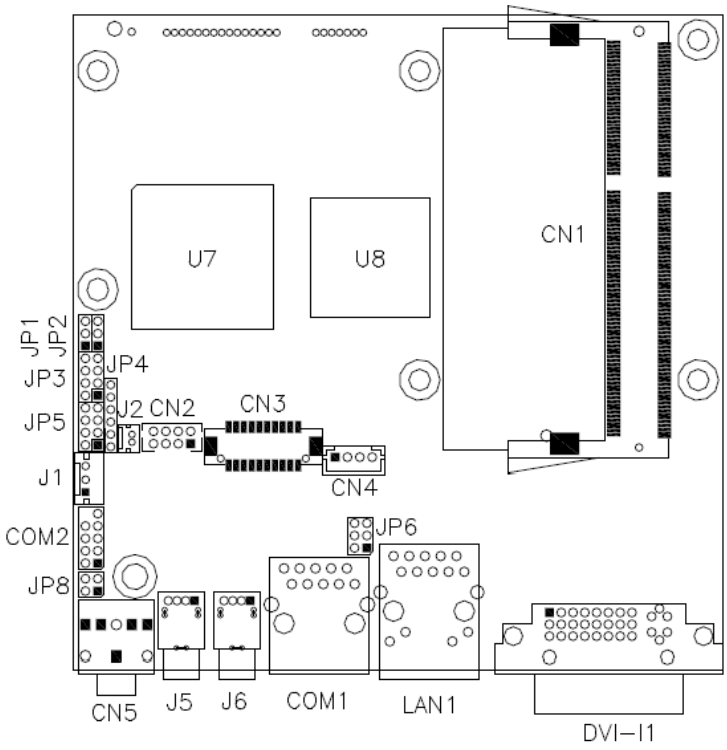
3. To remove the DDR3 module, press the clips with both hands.



Setting Jumper

Jumpers are used on the motherboard 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 and their respective functions.

Jumper Locations



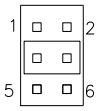
JP1: Clear CMOS Setting

JP1	Setting
	Normal
	Clear CMOS

JP2: LCD Panel Power Selection

JP2	LCD Panel Power
	3.3V
	5V

JP6: COM1 RS232 +5V/+12V Power Setting

JP6	Setting	Function
	Pin 1-2 Short/Closed	+12V
	Pin 3-4 Short/Closed	Normal
	Pin 5-6 Short/Closed	+5V

Pin Definition

BIOS Setup

This chapter describes the different settings available in the AMI BIOS that comes with the board.

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 are 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:

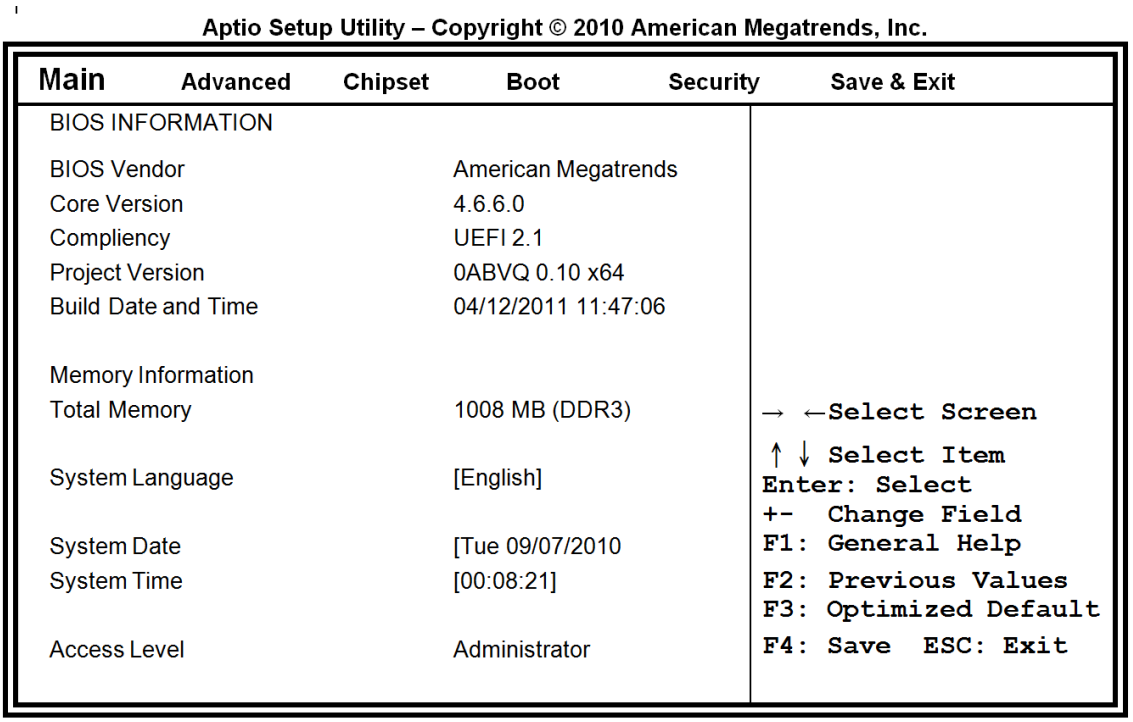
Press <DEL> to Enter Setup

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

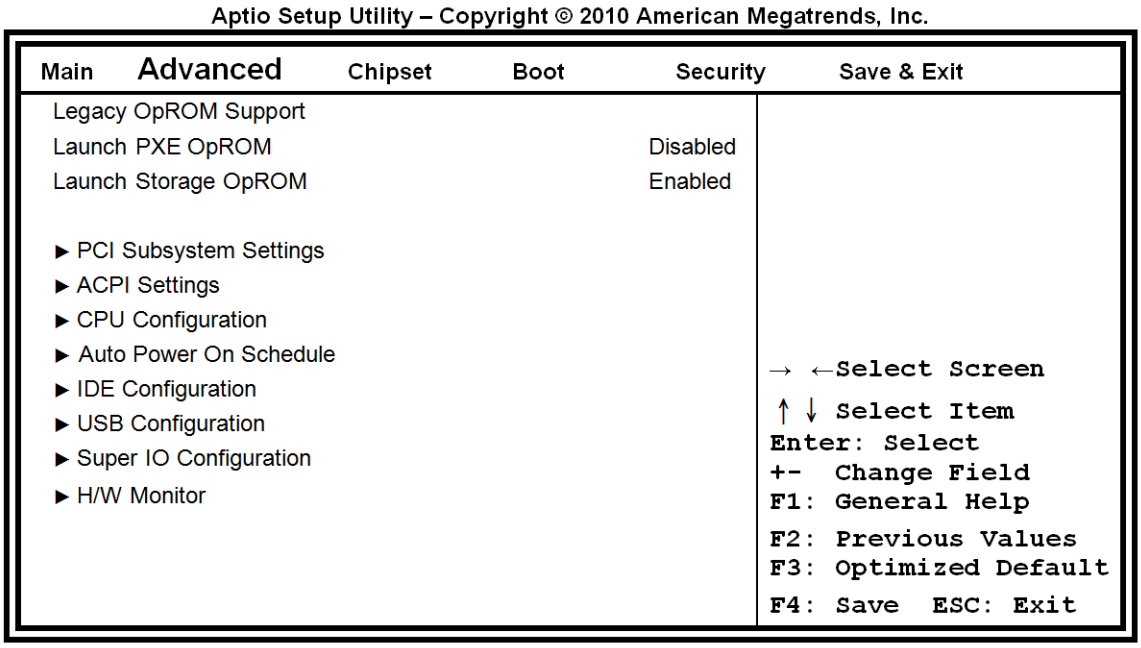
Set the Date. Use Tab to switch between Data elements.

System Time

Set the Time. Use Tab to switch between Time 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

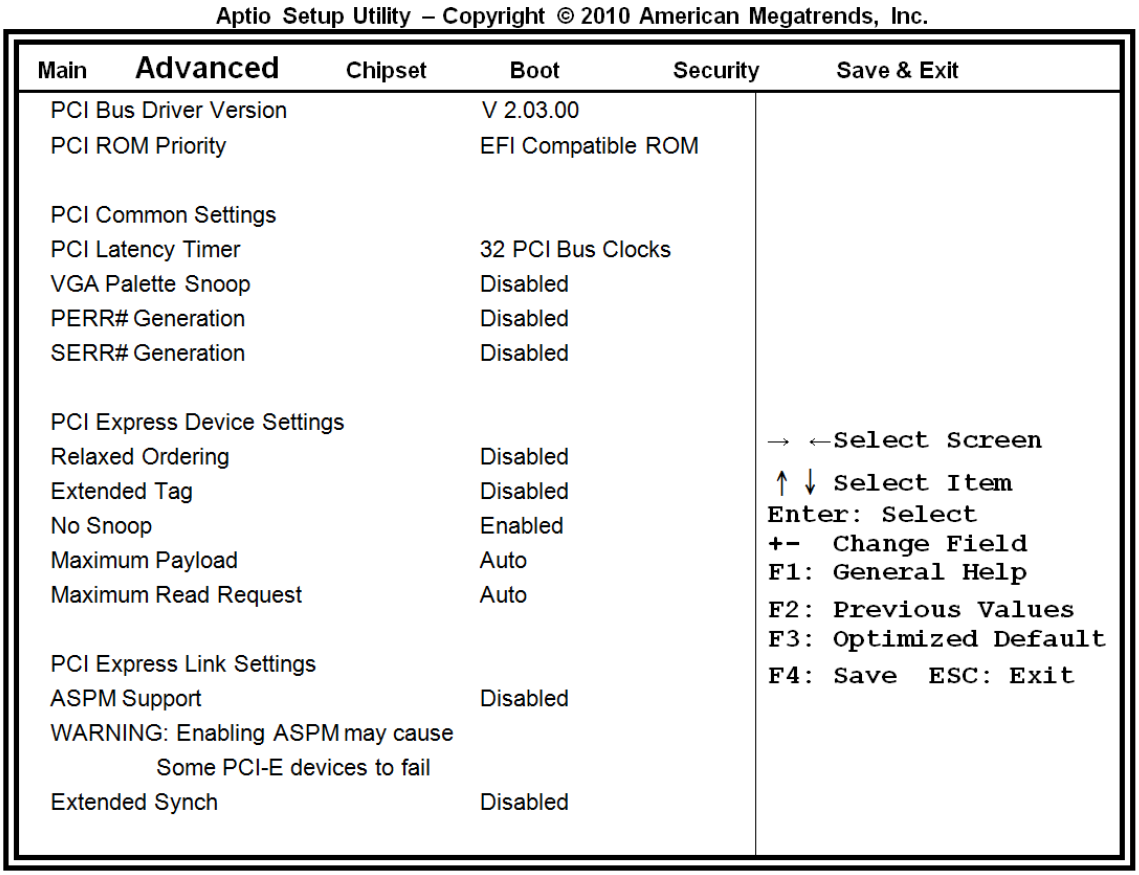
Enable or Disable Boot Option for Legacy Network Devices.

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.



PCIE Configuration

The fields under PCIE Configuration features settings for *Primary Dual Slot Config, GPP Slots Power Limit, GFX ports, GPPs and NB-SB port features*.

Internal Graphics Mode

The settings for IB828 are *Disabled and UMA; while the IB828 has additional settings of Sideport and UMA+sideport.*

Init Display First

The default setting is *IGX.*

NB Power Management

The default setting is *Auto.*

Memory Hole At 15M-16M

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB. The choices are *Enabled* and *Disabled*.

System BIOS Cacheable

The setting of *Enabled* allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

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

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

PCI Express Link Settings

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 State

AUTO – BIOS auto configure

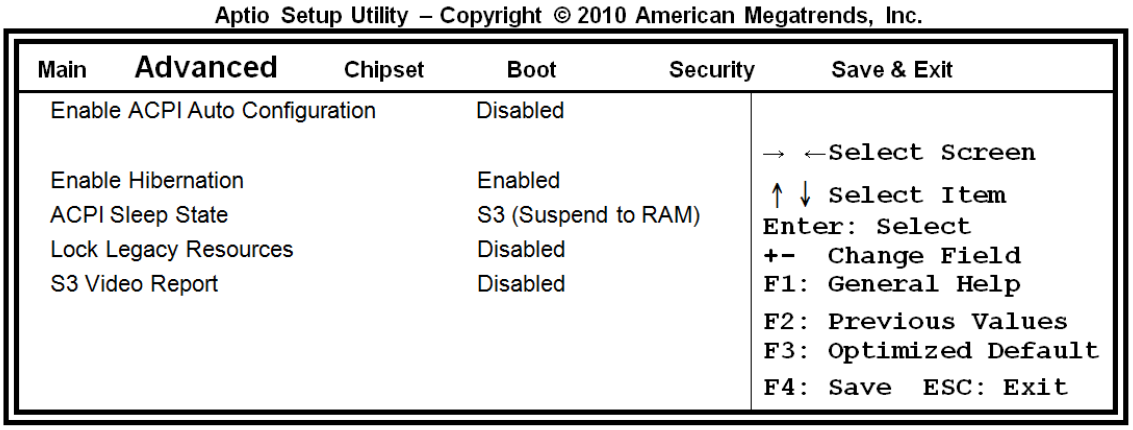
DISABLE – Disables ASPM

Extended Synch

If ENABLED allows generation of Extended Synchronization patterns.

ACPI Settings

This section configures the system ACPI parameters.



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.

Lock legacy Resources

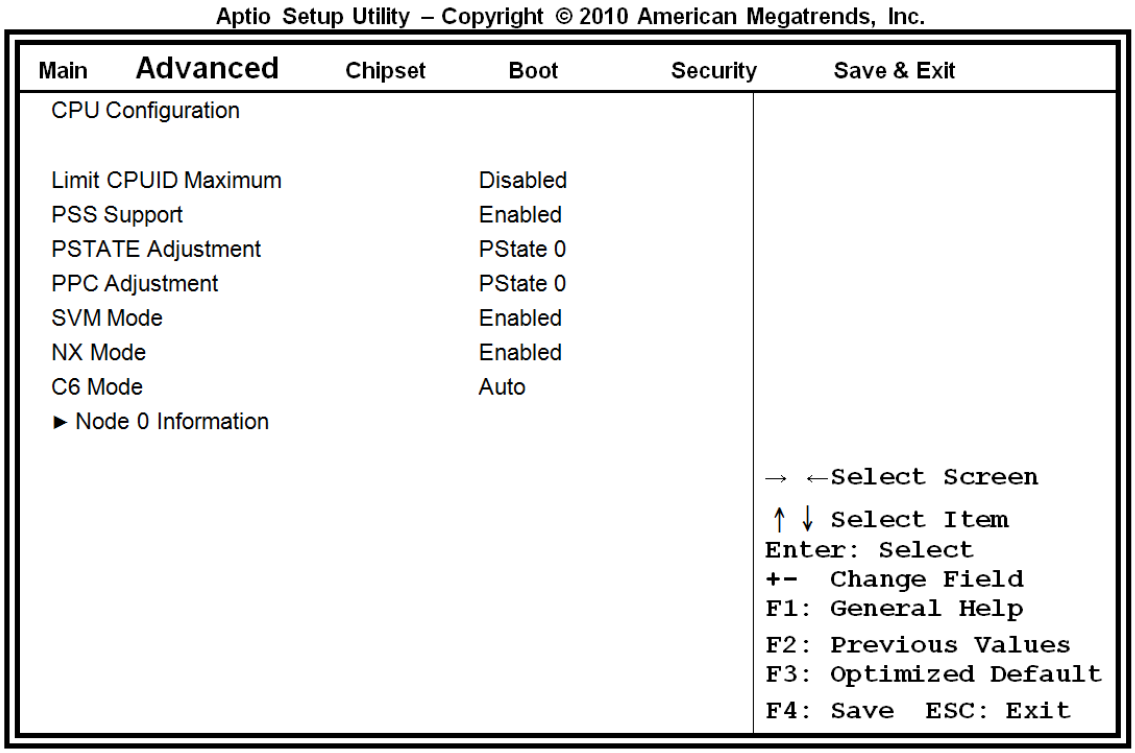
Enabled or Disabled Lock of Legacy Resources

S3 Video Repost

Enabled or Disabled S3 Video Repost.

CPU Configuration

This section shows the CPU configuration parameters.



Limit CPUID Maximum

Disabled for Windows XP.

PSS Support

Enabled /disabled the generation of ACPI_PPC, and _PCT objects.

PSTATE Adjustment

Provide to adjust startup P-state level.

PPC adjustment

Provide to adjust_PPC object.

NX Mode

Enabled/disabled NO-execute page protection Function.

SVM Mode

Enabled/disabled CPU Virtualization.

C6 Mode

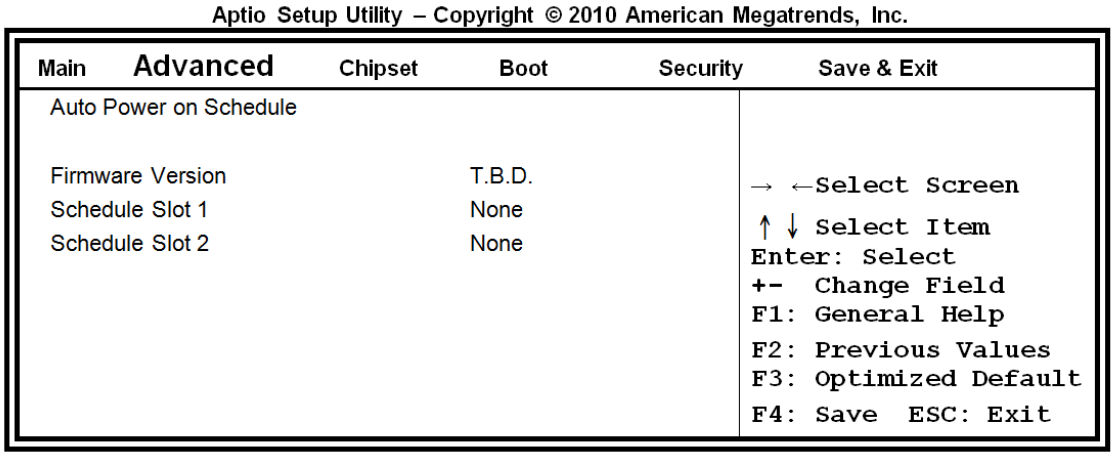
Enabled/disabled C6.

Node 0 Information

View Memory Information related to Node 0.

Auto Power On Schedule

This section setups the power on time for the system.



Schedule Slot 1

Setup the hou/minute for sytem power on.

Schedule Slot 2

Setup the hou/minute for sytem power on.

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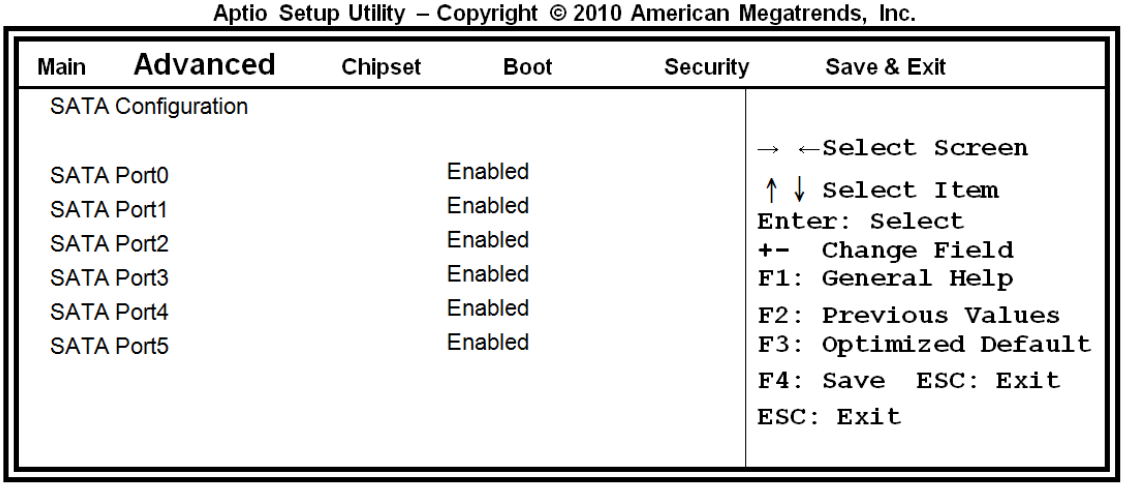
IDE Configuration

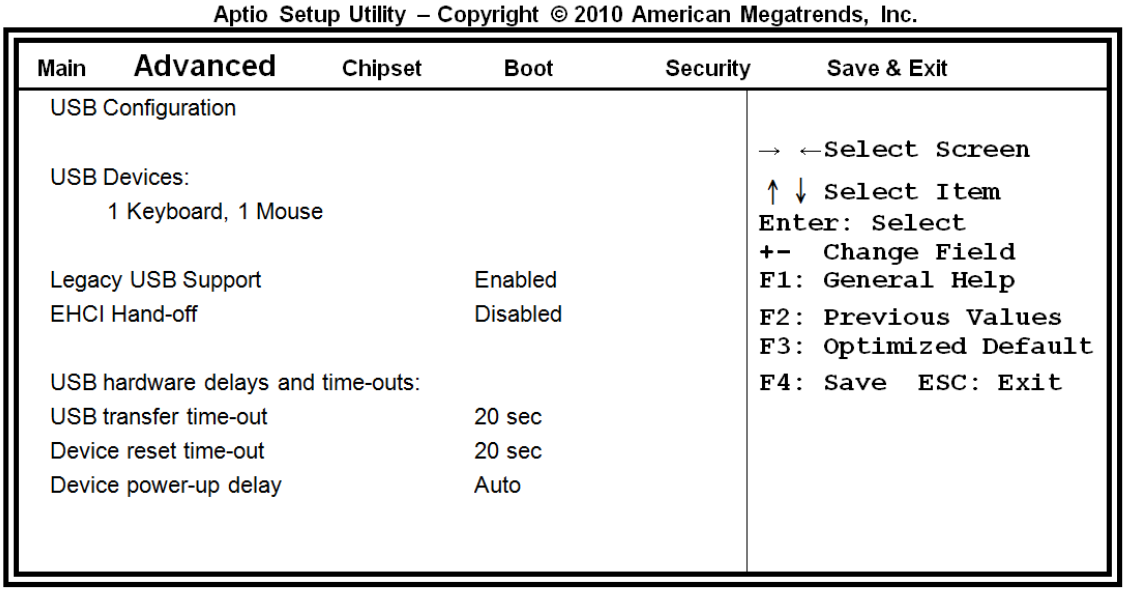
This section shows the IDE devices configuration.



Serial-ATA Controller

Enable / Disable Serial ATA Controller.

USB Configuration



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.

EHCI Hand-off

Enabled/Disabled. 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.

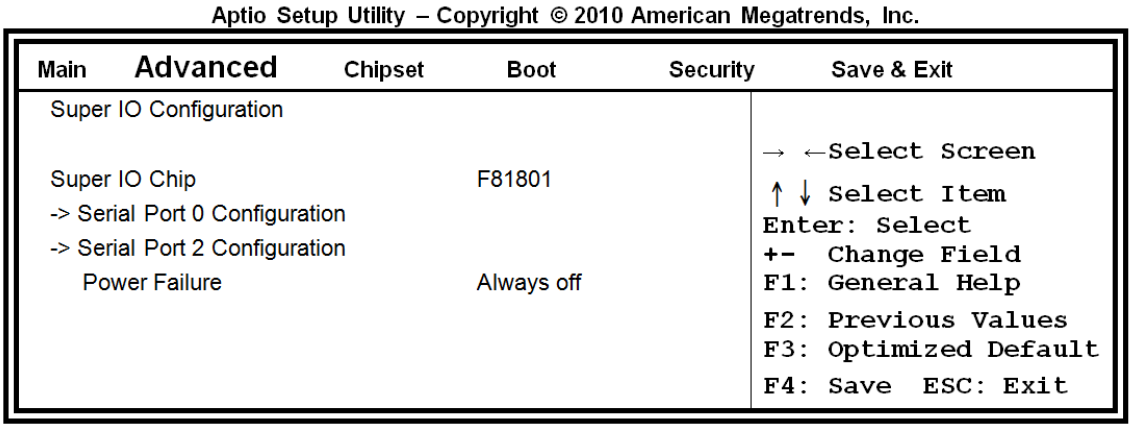
Device reset time-out

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' users default value: for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.

Super IO Configuration



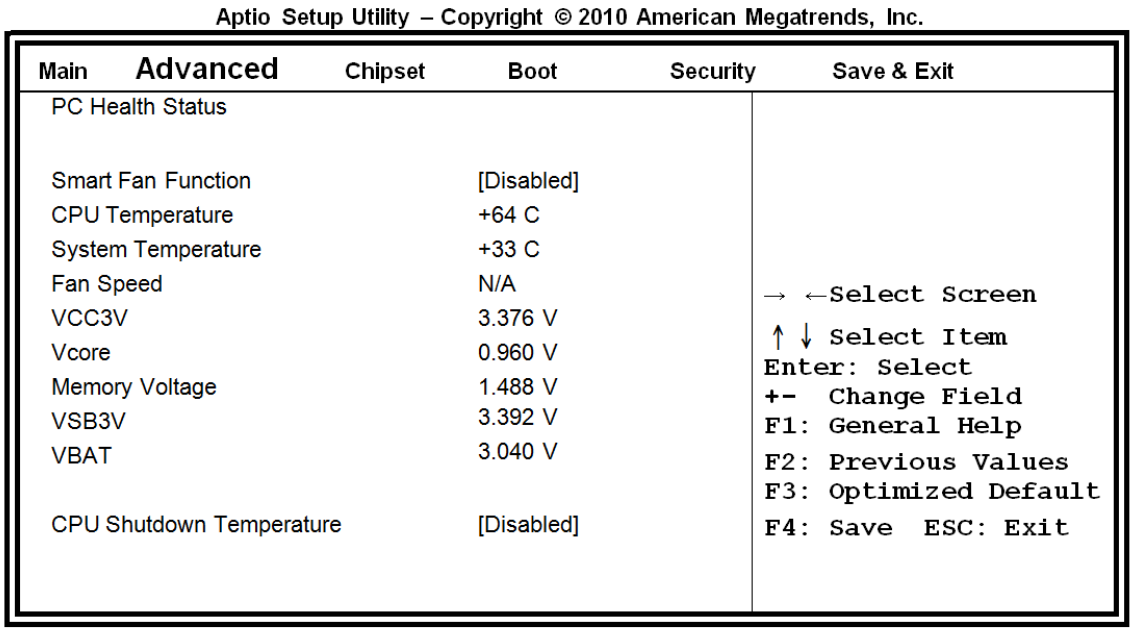
Serial Port 0/1 Configuration

Set Parameters of Serial Port 0/1 (COMA/COMB)

Power Failure

The options: Keep last state, By pass mode, Always on, and Always off.

H/W Monitor



Temperatures/Voltages

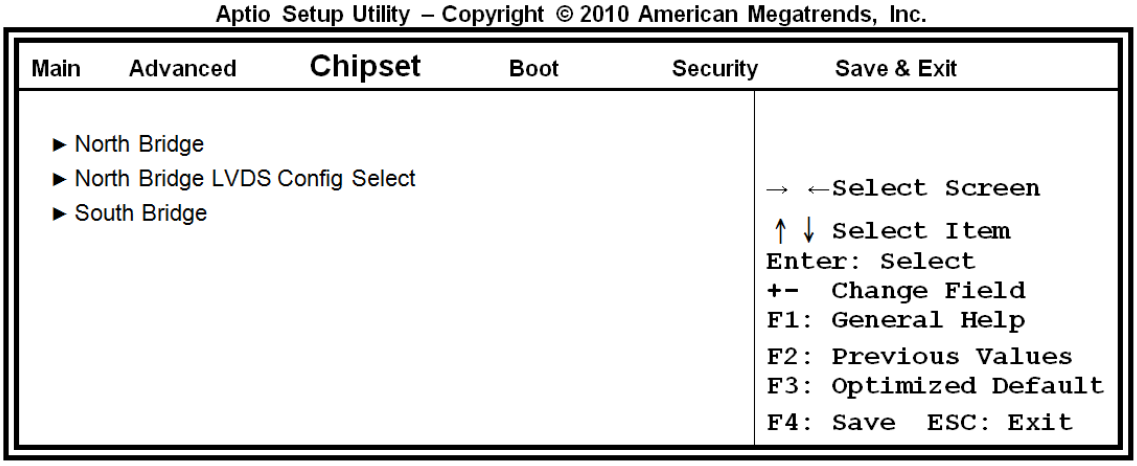
The values are read-only values as monitored by the system and show the PC health status.

CPU Shutdown Temperature

Aside from the Disabled options, this field allows the setting of shutdown temperature from 70C to 95C.

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.



North Bridge

This item shows the North Bridge Parameters.

North Bridge LVDS Config Select

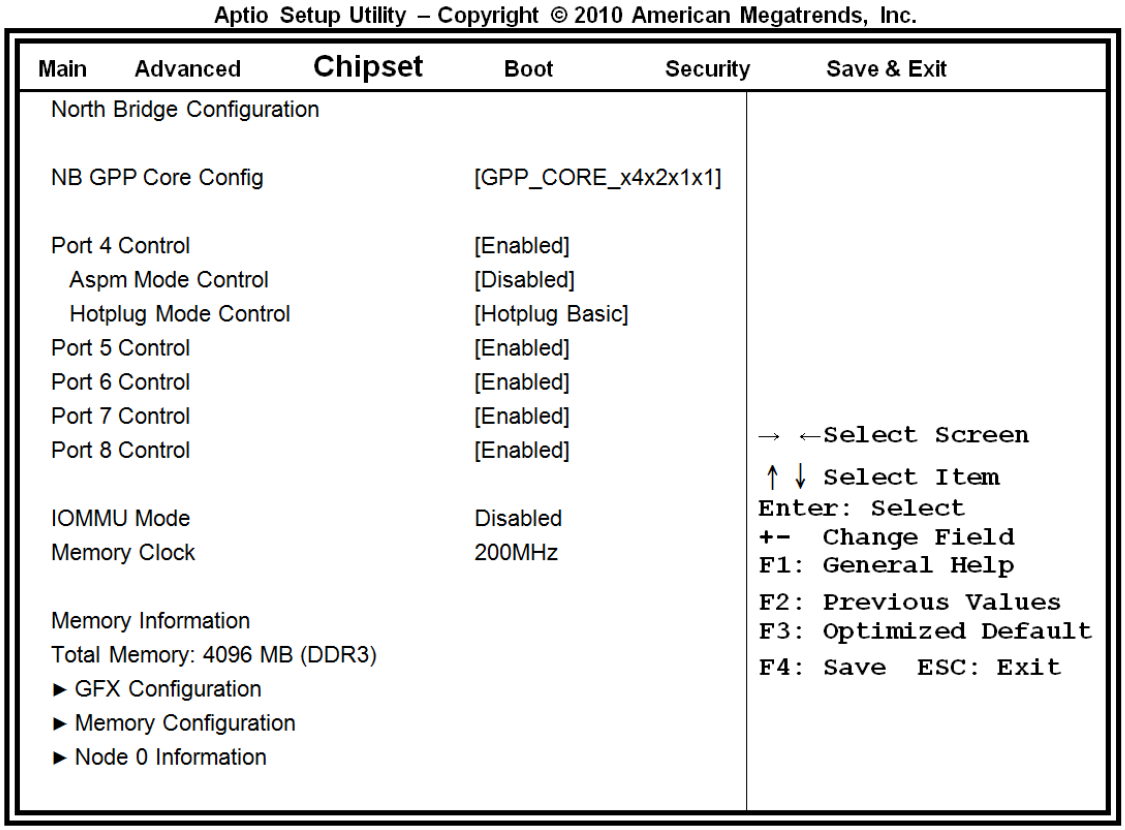
This item shows the Specify INT15 options for LVDS

South Bridge

This item shows the South Bridge Parameters.

North Bridge

This section allows you to configure the North Bridge Chipset.



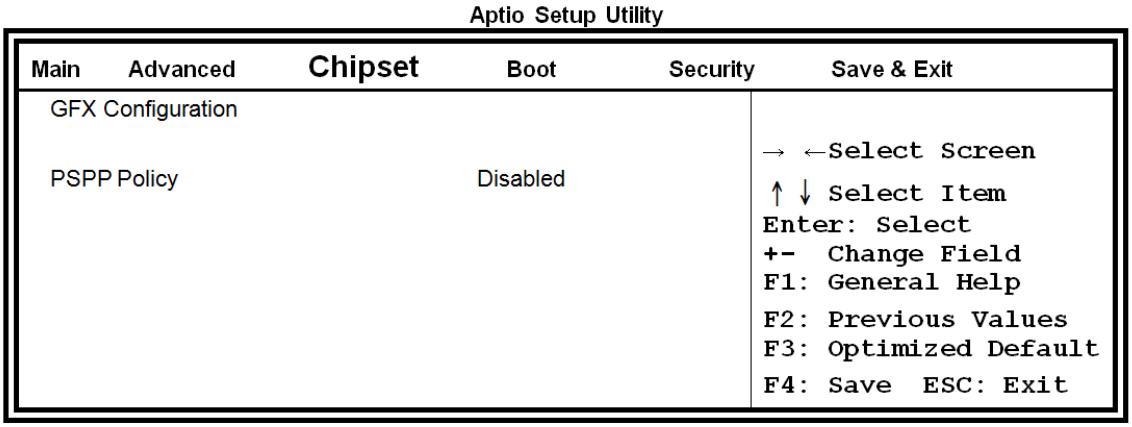
IOMMU Mode

IOMMU is supported on LINUX based systems to convert 32bit I/O to 64bit MMIO.

Memory Clock

This option allows user to select different memory clock.

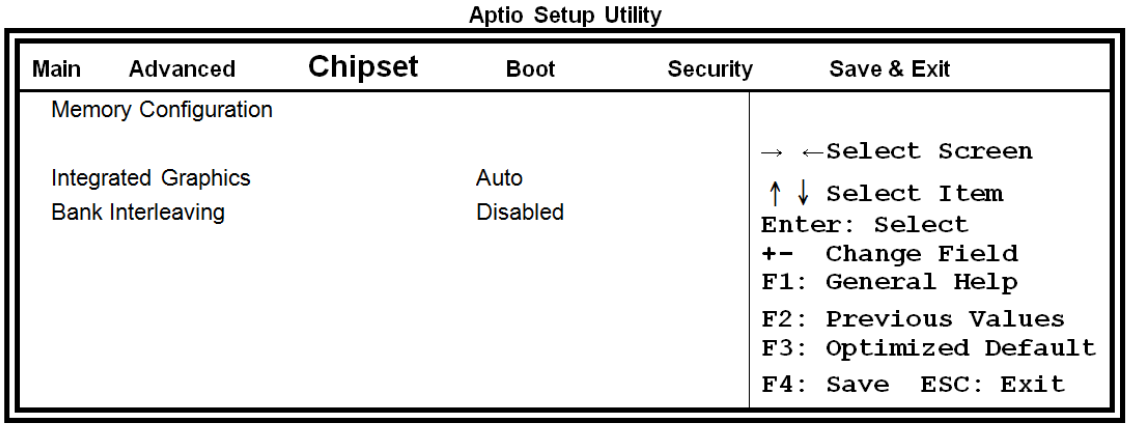
GFX Configuration



PSPP Policy

PCIe speed power policy.

Memory Configuration



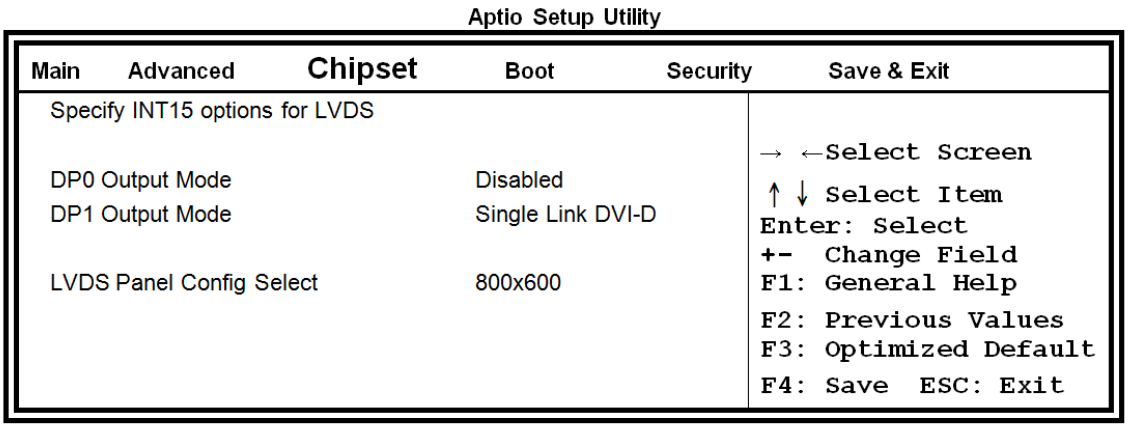
Integrated Graphics

Enable Integrate Graphics controller.

Node 0 Information

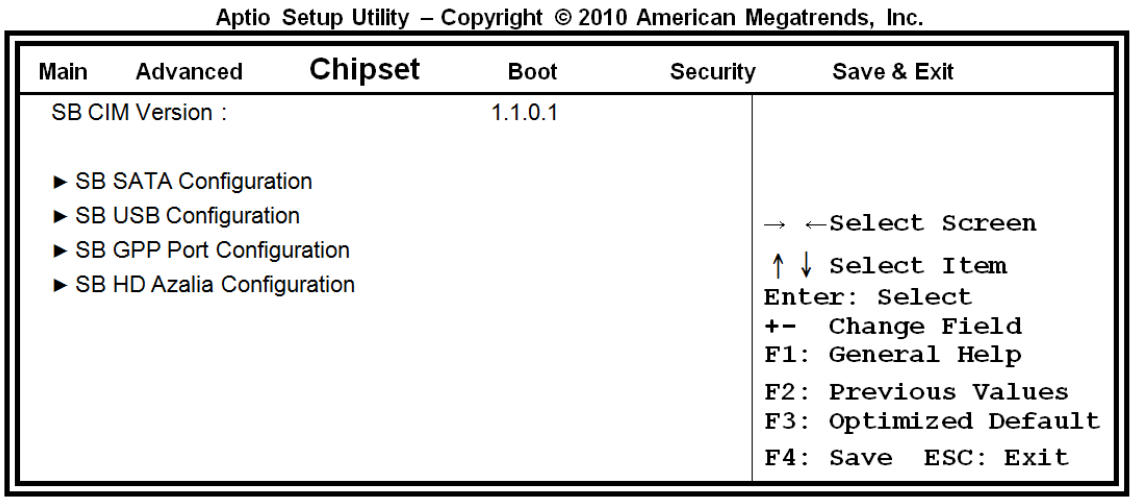
View memory information related to Node 0.

North Bridge LVDS Config Select

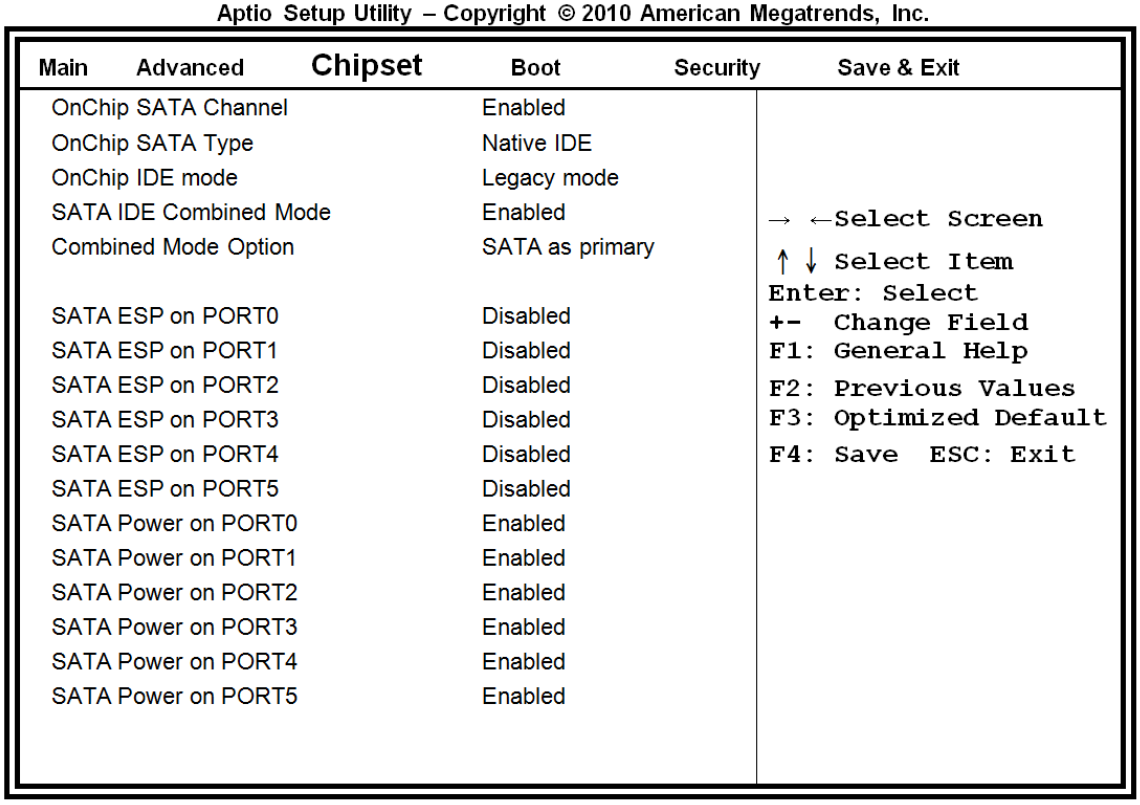


South Bridge

This section allows you to configure the South Bridge Chipset.



SB SATA Configuration



OnChip SATA Type

Native IDE / n RAID / n AHCI / n AHCI / n Legacy IDE / n IDE->AHCI / n HyperFlash

SB USB Configuration

Aptio Setup Utility – Copyright © 2010 American Megatrends, Inc.

Main	Advanced	Chipset	Boot	Security	Save & Exit
OHCI HC (Bus 0 Dev 18 Fn 0)			Enabled		
OHCI HC (Bus 0 Dev 19 Fn 0)			Enabled		
OHCI HC (Bus 0 Dev 22 Fn 0)			Enabled		
OHCI HC (Bus 0 Dev 20 Fn 5)			Enabled		
USB PORT 0			Enabled		
USB PORT 1			Enabled		
USB PORT 2			Enabled		
USB PORT 3			Enabled		
USB PORT 4			Enabled		
USB PORT 5			Enabled		
USB PORT 6			Enabled		
USB PORT 7			Enabled		
USB PORT 8			Enabled		
USB PORT 9			Enabled		
USB PORT 10			Enabled		
USB PORT 11			Enabled		
USB PORT 12			Enabled		
USB PORT 13			Enabled		
USB PORT FL0			Enabled		
USB PORT FL1			Enabled		
USB Device Wakeup From S3 or S4					

→ ←Select Screen
↑ ↓ Select Item
Enter: Select
+- Change Field
F1: General Help
F2: Previous Values
F3: Optimized Default
F4: Save ESC: Exit

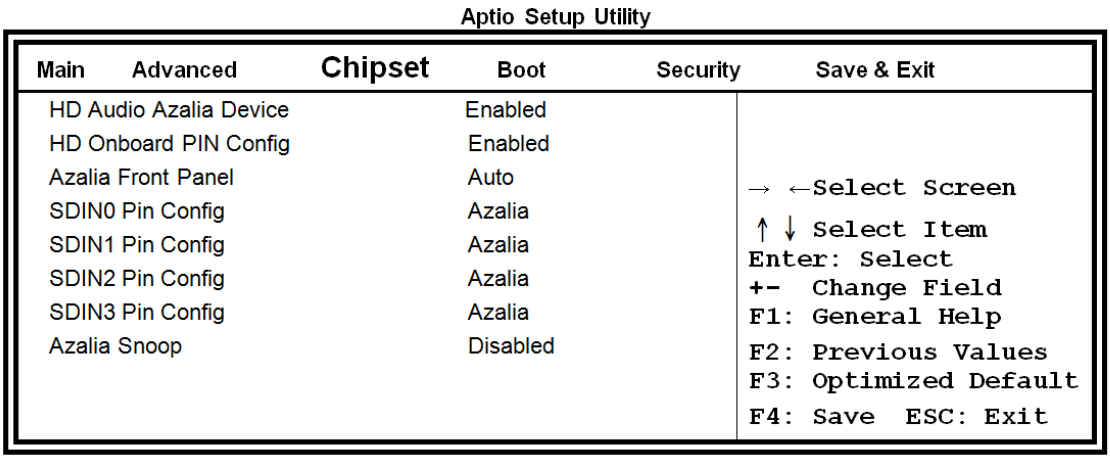
SB GPP Port Configuration

Aptio Setup Utility – Copyright © 2010 American Megatrends, Inc.

Main	Advanced	Chipset	Boot	Security	Save & Exit
SB GPP Function			Enabled		
GPP Port Link Configuration			1:1:1:1 mode		
hide unused GPP port			Enabled		
GPP Link ASPM			Disabled		
NB-SB PHY PLL Power Down			Enabled		
SB GPP PHY PLL Power Down			Enabled		
SB GPP LANE REVERSAL			Disabled		

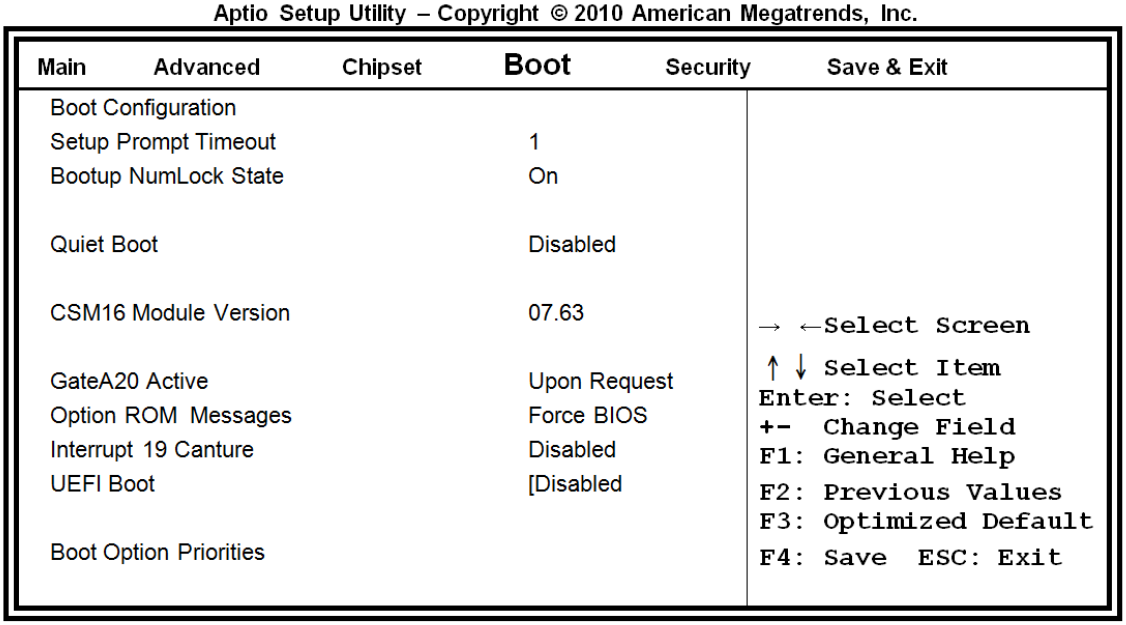
→ ←Select Screen
↑ ↓ Select Item
Enter: Select
+- Change Field
F1: General Help
F2: Previous Values
F3: Optimized Default
F4: Save ESC: Exit

SB HD Azalia Configuration



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.

Bootup NumLock State

Select the keyboard NumLock state.

Quiet Boot

Enables/Disables Quiet Boot option.

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.

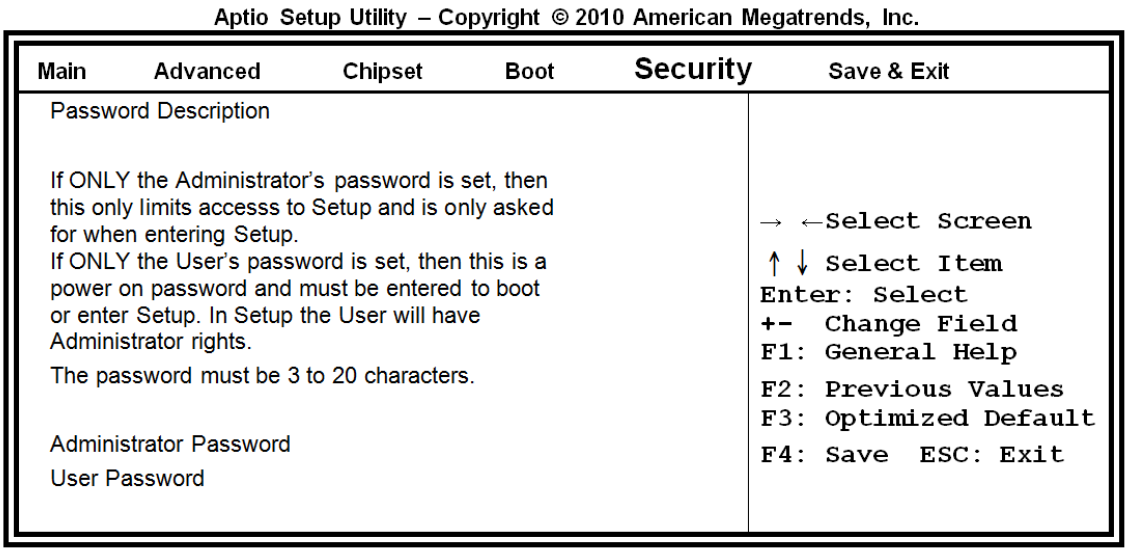
Interrupt 19 Canture

Enable: Allows Option ROMs to trap Int 19.

UEFI Option Priorities

Enables/Disables UEFI boot from disks.

Security Settings



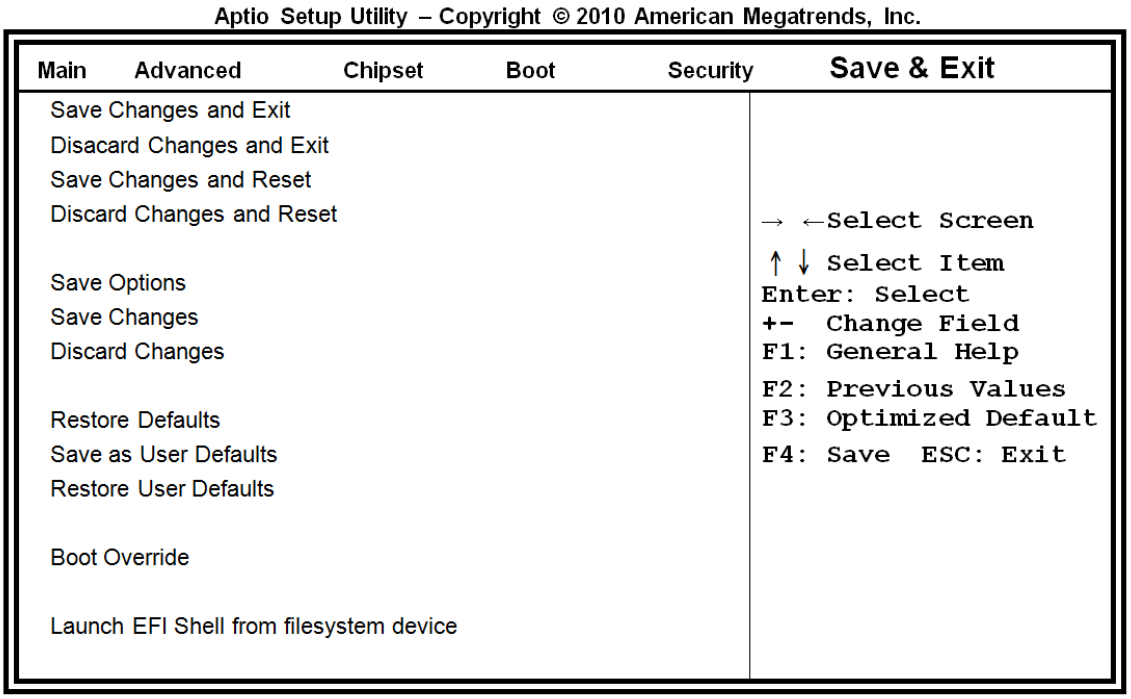
Administrator Password

Set Setup Administrator Password.

User Password

Set User Password.

Save & Exit Settings



Save Changes and Exit

Exit system setup after saving the changes.

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.

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.

Driver 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.

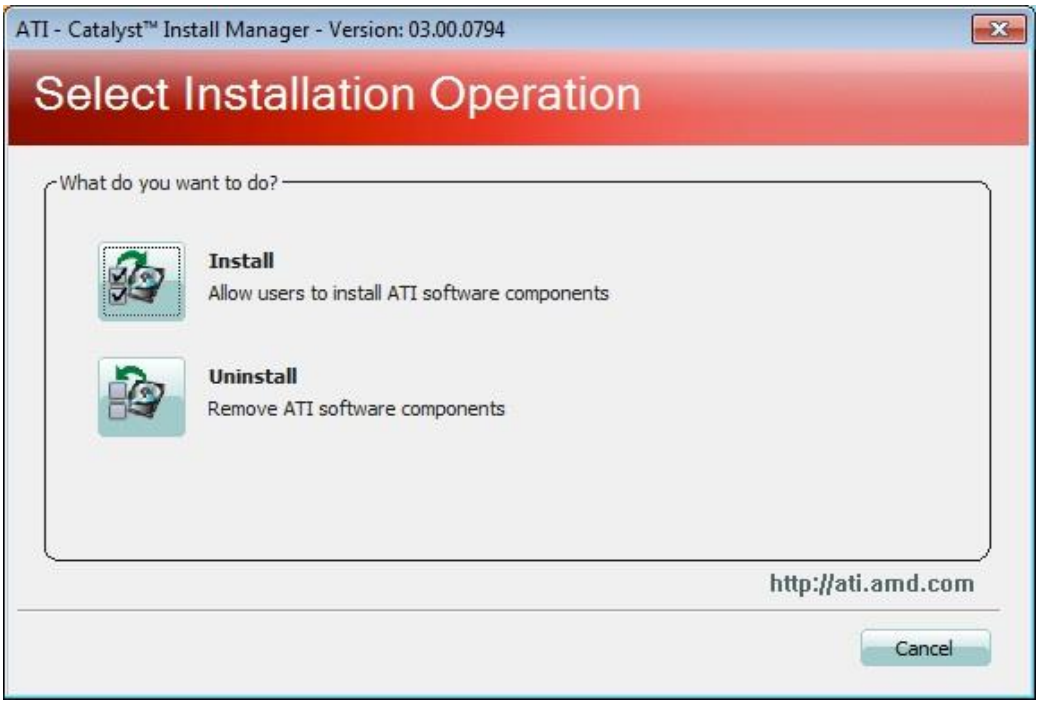
AMD A55E Chipset Family Graphic Driver Installation

Follow the steps below to install the AMD A55E chipset family graphics drivers.

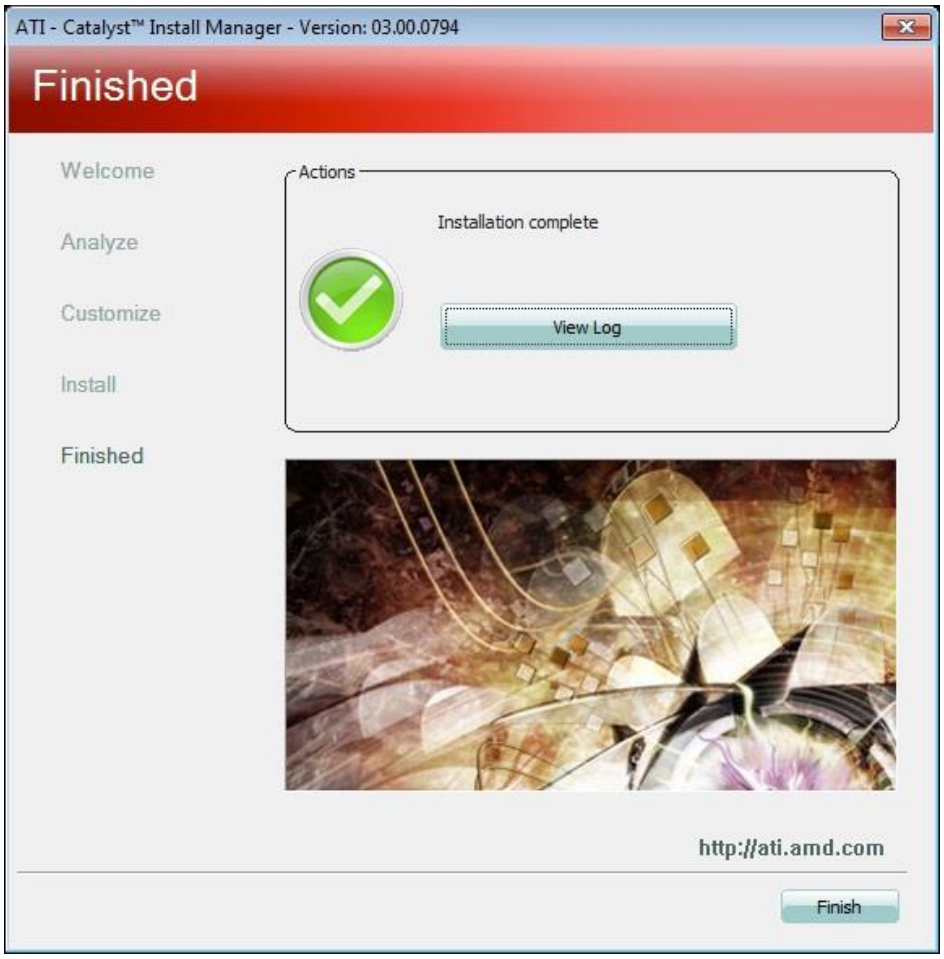
1. Insert the CD that comes with the system. Click ***AMD***, then ***AMD A55E Chipset Drivers***, and then ***AMD A55E Series Graphics Drivers***.

2. When the welcome screen to the ATI – Catalyst™ Install Manager appears, click ***Next.*** Now, click ***Install*** to allow the installation of the software components.


ATI - Catalyst™ Install Manager - Version: 03.00.0794
Welcome
Welcome
Welcome
Catalyst™ Install Manager is used to install and update the software for your graphics products
Language Support
Which language would you like Catalyst™ Install Manager to display?
English
http://ati.amd.com
Next >
Cancel


ATI - Catalyst™ Install Manager - Version: 03.00.0794
Select Installation Operation
What do you want to do?
Install
Allow users to install ATI software components
Uninstall
Remove ATI software components
http://ati.amd.com
Cancel

3. Select ***Express*** and click ***Next*** to proceed with the installation. On the following screen, click ***Finish*** to complete the installation process.

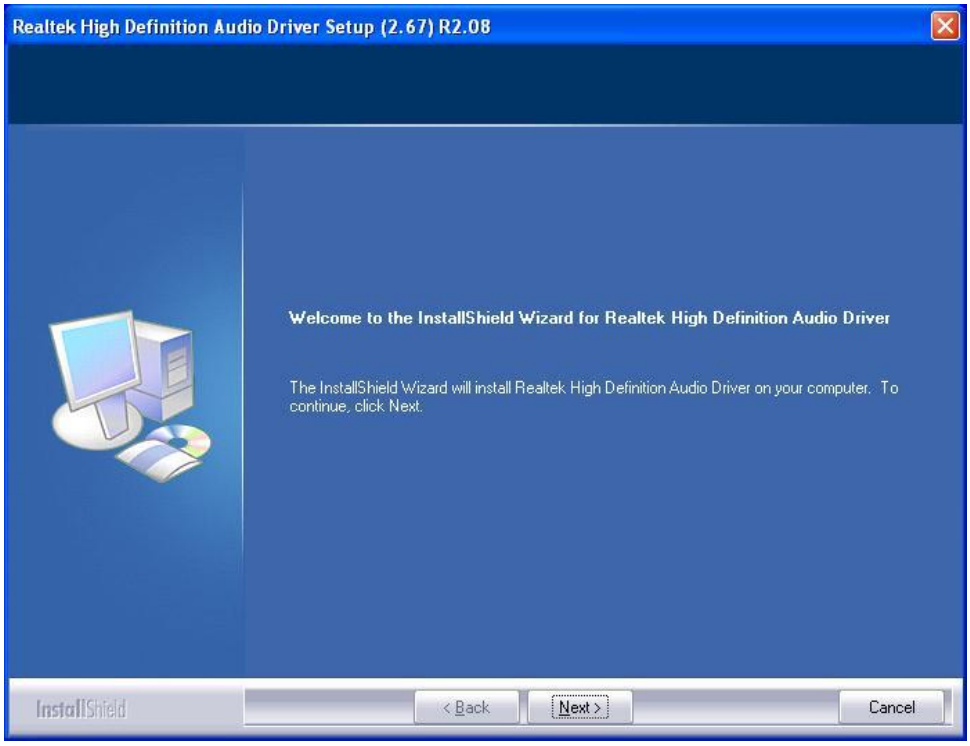

ATI - Catalyst™ Install Manager - Version: 03.00.0794
Finished
Welcome
Analyze
Customize
Install
Finished
Actions
Installation complete
View Log
http://ati.amd.com
Finish

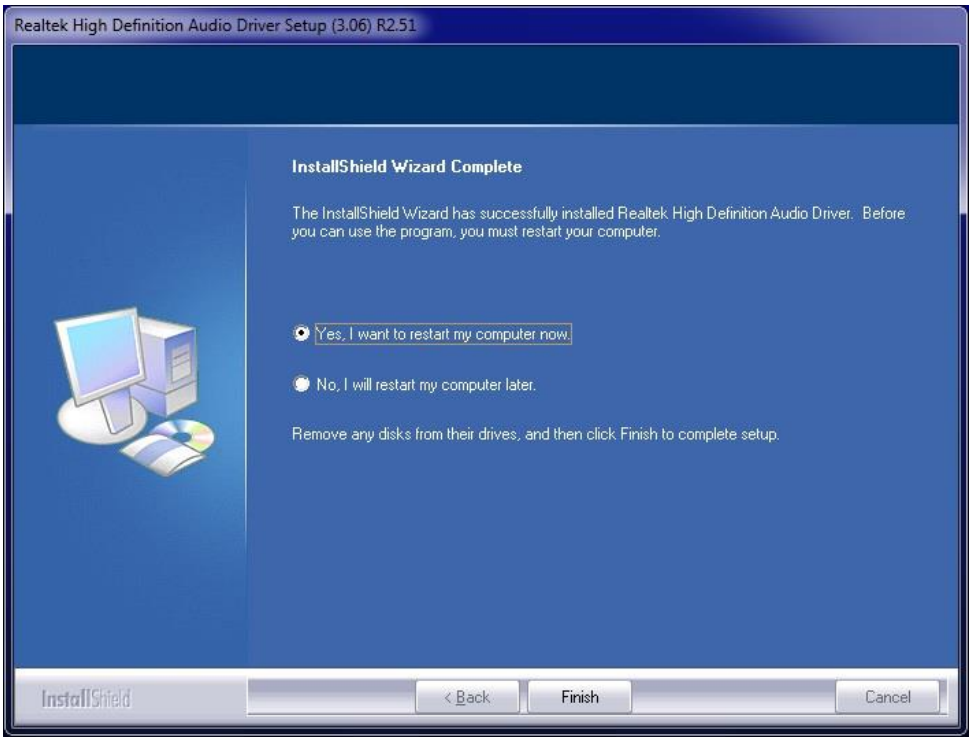
Realtek High Definition Audio Driver Installation

Follow the steps below to install the Realtek HD audio drivers.

1. Insert the CD that comes with the system. Click ***AMD*** and click ***Realtek High Definition Audio Driver.***

2. When the welcome screen to the Audio Driver Setup appears, click ***Next*** to start the software installation. Once the InstallShield Wizard is complete, click ***Finish*** to restart the computer.





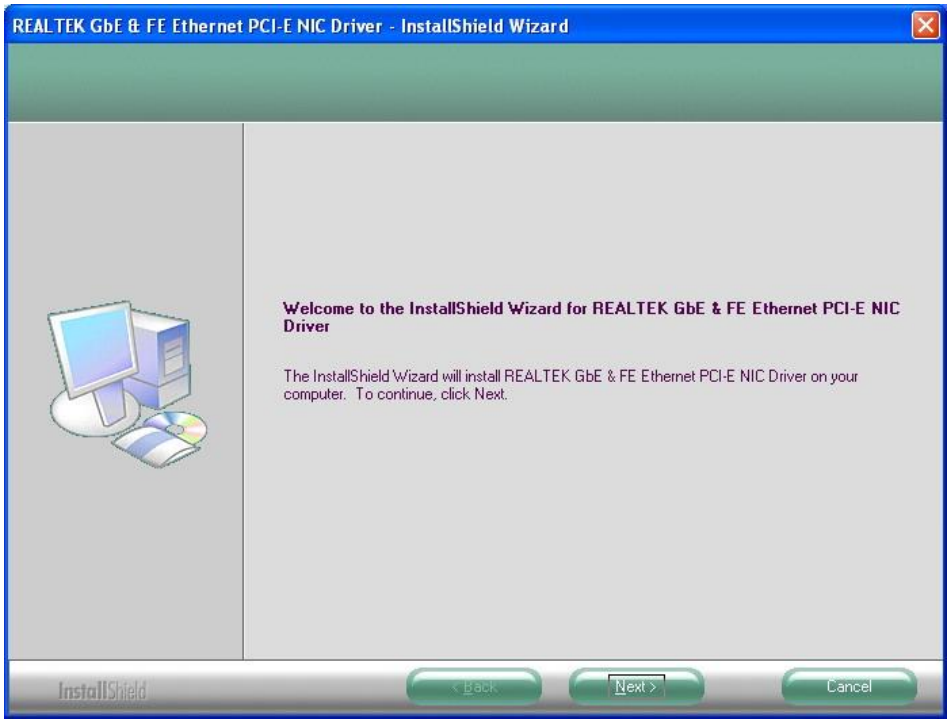
Realtek LAN Controller Drivers Installation

Follow the steps below to install the Realtek LAN drivers.

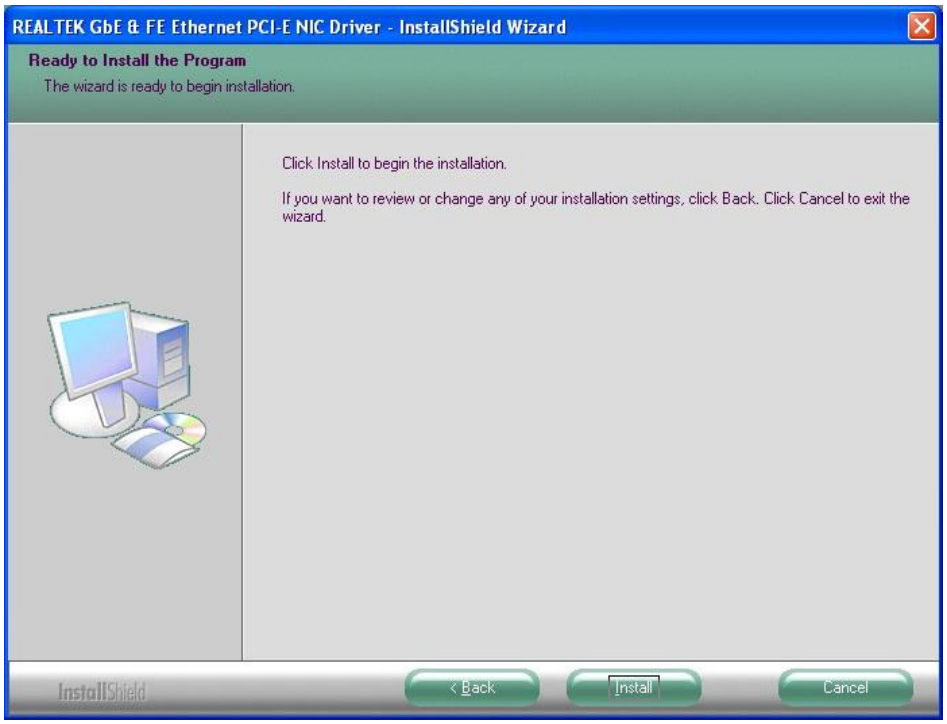
1. Insert the CD that comes with the system. Click ***Intel***, then ***LAN Card,*** and then ***Realtek Lan Controller Drivers***..

2. Click ***Realtek RTL8111E LAN Drivers.***

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



4. When the InstallShieldWizard has finished installing the Realtek LAN drivers, click ***Finish***.


REALTEK GbE & FE Ethernet PCI-E NIC Driver - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel