GS-SR168

1U Rack Mount Server

System Installation Guide

Table of Content

Safety, Care and Regulatory Information

❧ Important safety information

Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.

* The product should be operated only from the type of power source indicated on the rating label.

* If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area. The voltage selector switch is set at the factory to the correct voltage.

* The plug-socket combination must be accessible at all times because it serves as the main disconnecting device.

* All product shipped with a three-wire electrical grounding-type plug only fits into a grounding-type power outlet. This is a safety feature. The equipment grounding should be in accordance with local and national electrical codes. The equipment operates safely when it is used in accordance with its marked electrical ratings and product usage instructions

* Do not use this product near water or a heat source.

* Set up the product on a stable work surface or so as to ensure stability of the system.

* Openings in the case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space around the system for ventilation when you set up your work area. Never insert objects of any kind into the ventilation openings.

* To avoid electrical shock, always unplug all power cables and modem cables from the wall outlets before removing covers.

* Allow the product to cool before removing covers or touching internal components.

❧ Precaution for Product with Laser Devices

Observe the following precautions for laser devices:

* Do not open the CD-ROM drive, make adjustments, or perform procedures on a laser device other than those specified in the product's documentation.

* Only authorized service technicians should repair laser devices.

❧ Precaution for Product with Modems, Telecommunications, ot Local Area Network Options

Observe the following guidelines when working with options:

* Do not connect or use a modem or telephone during a lightning storm. There may be a risk of electrical shock from lightning.

* To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.

* Do not plug a modem or telephone cable into the network interface controller (NIC) receptacle.

* Disconnect the modem cable before opening a product enclosure, touching or installing internal components, or touching an uninsulated modem cable or jack.

* Do not use a telephone line to report a gas leak while you are in the vicinity of the leak.

♦ Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class B 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 his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Neither the provider nor the manufacturer are responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

♦ FCC part 68 (applicable to products fitted with USA modems)

The modem complies with Part 68 of the FCC Rules. On this equipment is a label that contains, among other information, the FCC registration number and Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your telephone company.

If your telephone equipment causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify in advance. But, if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect proper operation of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

The FCC prohibits this equipment to be connected to party lines or coin-telephone service.

The FCC also requires the transmitter of a FAX transmission be properly identified (per FCC Rules Part 68, Sec. 68.381 (c) (3)).

/ for Canadian users only /

❧ Canadian Department of Communications Compliance Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de Classe B prescrites dans le reglement sur le brouillage radioelectrique edicte par Industrie Canada.

❧ DOC notice (for products fitted with an Industry Canada-compliant modem)

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user satisfaction.

Before installing this equipment, users ensure that it is permissible to be connected to the facilities of the local Telecommunications Company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions might not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if resent are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the sum of the Load Numbers of all the devices does not exceed 100.

/ for European users only /

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.
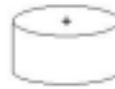
Introduction

Welcome to Gigabyte GS-SR168 Rack mount Server System Installation Guide. The guide provides instructions for configuration hardware for the GS-SR168 your system.

This installation guide will assist you in installing all the essential components for the sever system. For your protection, please read and undertand all of the safety and operating instructions regarding your Gigabyte Server and retain for future reference. The procedures in this guidebook assusme that your are a system or network administrator experienced in installing similar hardware.

Contents Packages

When opening the package, please ensure the system components are not damaged during the shipping. Using the following checklist to verify the contents. If any component is missing or damaged in the system, please contact your vendor immediately.

- ☑ Chassis
- ☑ Power Supply (Installed)
- ☑ FAN Duct x 1
- ☑ Silm type CD-ROM drive (Installed)
- ☑ GS-SR168 System Installation Guide
- ☑ Driver CD for motherboard driver & utility
- ☑ GC-REIU (PCI-E Riser Card)

- ☑ GA-9IVDPL Motherboard (Installed)
- ☑ GSMT User's Manual
- ☑ CPU Heat Sink x 2
- ☑ Cables (RJ45)
- ☑ Case Handle Kit x 2
- ☑ COM2 Cable x 1

⚠ WARNING!

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.

Chapter 1 Features Summary

Motherboard	• GA-9IVDPL
Processor Supported	• Dual socket 604 for Intel® Xeon(Nocona/Irwindale) processor suopprts 3.6 GB and upper
	• Intel® Xeon (Nocona/Irwindale) CPUs supports 800 MHz FSB
	• 2nd cache depend on CPU
Chipset	• Intel® E7320 Chipset
	• Intel® 6300ESB
System Memory:	
Memory Capacity	• 6 x DDR socket up to 12 GB
Memory Type	• Registered DDR2 400
Error Correction:	• Single-bit Errors Correction, Multiple Bit Errors Detection
Expansion Slot	• 1 riser card supports 1 x 64/66MHz add-on card
	• 1 x PCI-E x8 slot
SATA RAID controller	• Intel® 6300ESB
	• Supports SATA RAID 0,1
Cooling Fans:	• 4 X CPU Fans
	• 1 X Power Fan
Integrated LANs:	
Controller	• Dual Intel® 82541GI GbE
Integrated Graphics:	
Controller	• Integrated, ATI Rage-XL
Graphics Memory	• 8MB SDRAM
Mass Storage System	• 2 x EasySwapable SATA HDDs
	• 1 Slim Type CD-ROM
Front Panel	• Power SW, Reset SW, NMI SW, UID SW,
	• 2 x LAN LED
	• 1 x Power/Sleep LED
	• 1 x HDD LED
	• 1 x Status LED
	• 1 x USB
	• 1 x COM

Super I/O		
Controller	•	ITE IT8712F-A Super I/O
Built-in I/O	•	2 x Serial ports (COM, 1 at rear and 1 at front)
	•	3 x USB 2.0 dual-port connector (2 at rear and 1 at front)
	•	1 x VGA connector
	•	2 x RJ45 LAN ports
	•	P/S 2 Keyboard and Mouse Connectors
System BIOS:		
BIOS Type	•	Lincensed Pheonix on 8Mb Flash RAM
Special Features	•	Supports multi boot function
	•	User setting for hardware monitoring
	•	Supports PXE
	•	ACPI 1.0 Compliant/ ACPI defined S1, S4, and S5
Server Management Functions: (Optional)		
BMC Chip	•	NS IPMI 1.5 controller
Failure Detection	•	IPMI 1.5 specification of Server management
Event Logging	•	32KB Nonvolatile Memory to Log System Failure Events
Remote Management	•	Follow the IPMI 1.5 specification of Server management
Environment		
Ambient Temperature	•	Operating Temperature: 5ºC to 35ºC
	•	Non-operating Temperature: 0ºC to 50ºC
Relative Humidity	•	10-80% operating Humidity at 30º C
Safety Regulations	•	FCC, CE, BSMI, CB,
System Dimention:	•	19"W x 1.73"H x 19.5"D
Electrical Power Supply	•	Single Power Supply 400W

Note: If you want to purchase USB FDD, we suggest MITSUMI as recommedned brand.

Chapter 2 System Overview
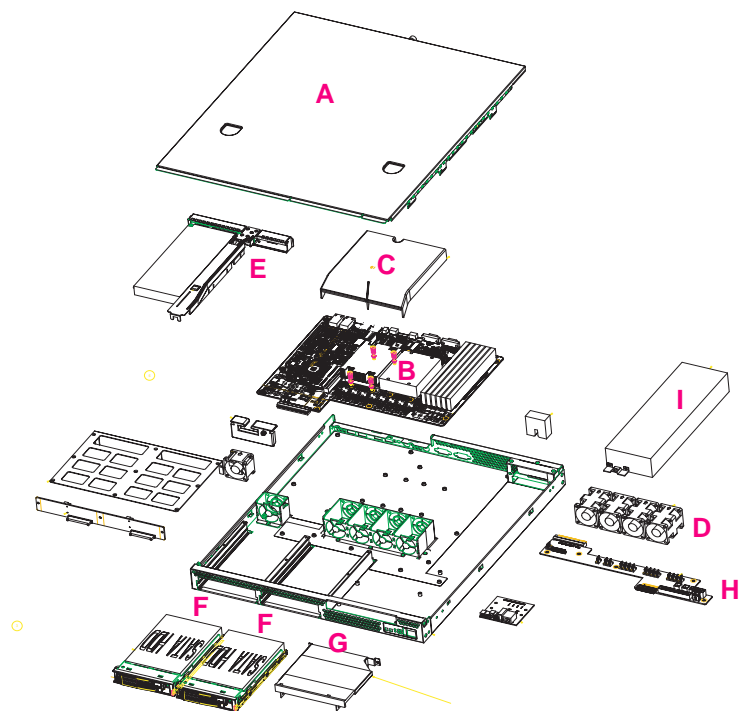
A. Chassis Cover	F. HDD Blank
B. Motehrboard - GA-9IVDPL	G. CD-ROM Drive
C. Fan Duct	H. Back plane board
D. System Fans	I. Power
E. Riser Card Support	

Chapter 3 System Hardware Installation

Please observe the safety information in chapter "Important Safety Information"
Do not expose the server to extreme environmental conditions. Protect it from dust,
humidity, and heat.

CAUTION

Step 3-1: Chassis Removal and Installation

Step 1   Loosen the thumbscrew from the back of the server.

Step 2   Push down the indentation located at two sides of the chassis, and slide toward to remove the
top cover.

Step 3   Reverse Step 1, and 2 to replace the chassis cover.
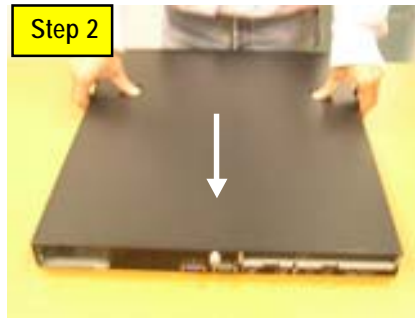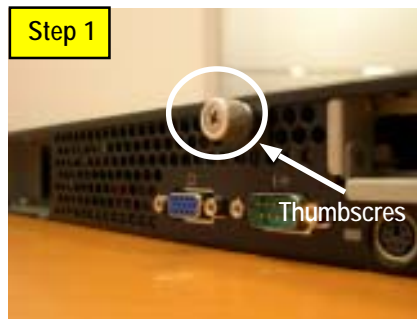
Note: Before installing CPU, you must remove the FAN duct. For FAN duct removal, please
see Sub-section 3-7 "**FAN Duct Removal and Installtion**" for detail instruction.

Step 3-2: CPU Installation

Please make sure the CPU type and speed that are supported by the motherboard.

Step 1   Angling the rod to 65-degree maybe feel a kind of tight , and then continue pull the rod to 90-degree when a noise "cough" made

Step 2   Locate Pin 1 in the socket and look   for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

Step 3   Press down the CPU socket lever and finish CPU installation.

Step 1

Step 2

Pin1 indicator
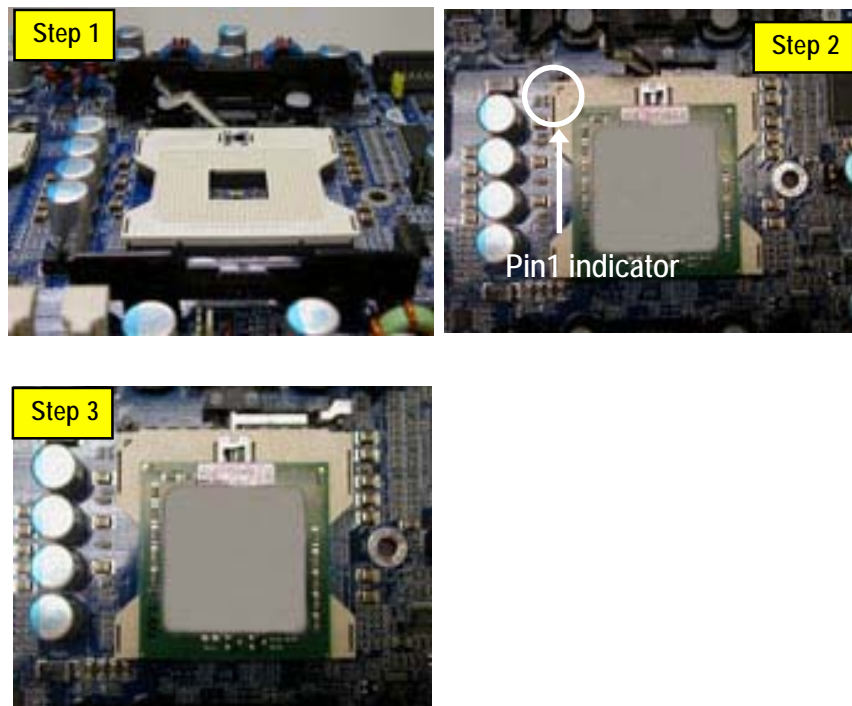
Step 3

Step 3-3: Heat Sink Installation

Step 1   Place the Heat Sink on the CPU. Before putting the heat sink on the CPU, please well
remember to apply the thermal conductivity compound on the CPU.
Step 2   Seat the heat sink with the four screws. Installation completed.

Step 3-4: Memory Installation

1. The DIMM slot has a notch, so the DIMM memory module can only fit in one direction.

2. Insert the DIMM memory module vertically into the DIMM slot. Then push it down.

3. Close the plastic clip at both edges of theDIMM slots to lock the DIMM module.

4. **DIMM must be populated in order starting at the nearest slot from the ATX power**.
Each logical DIMM must be made of two identical DIMMs having the same device size on each and the same DIMM size.

5. Reverse the installation steps when you wish to remove the DIMM module.
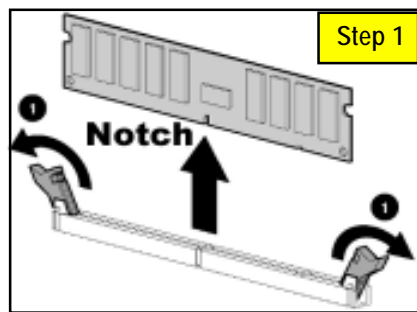
Step 3-5: PCI Expansion Card Installation

GS-SR168 provides expansion riser slot for one PCI-X 64/66MHz slot; and one with PCI-E x8 slot. To install the peripheral, please go through the following steps.

Note!! Before installing the PCI expansion card, please check the card size limitation. Size limitation for PCI-X height is 203.4 mm x 95 mm.

Step 1   Lift the riser bracket slightly, then pull it out from the server chassis.

Step 2   Align the expansion card with the guiding groove. Slide the expansion card into the slot until the card firmly seats.

Step 3   Align the riser bracket to the system module (see the arrow direction mark 1), and push it to locked position.

Step 4   Reverse Step 1 & 2 to lock the riser bracket firmly. Installation completed.
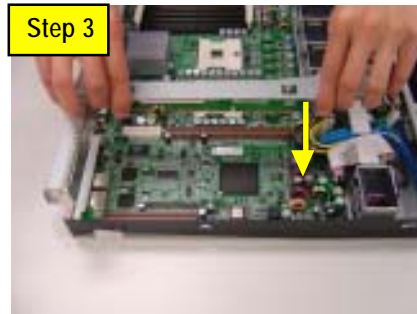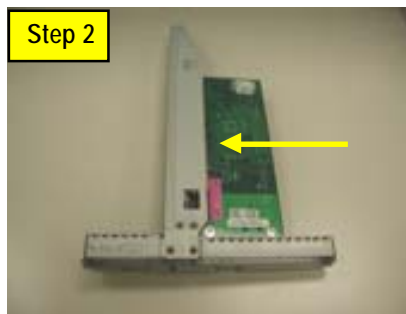
Step 1

Step 2

Step 3

Step 3-6: Hard Disk Drive Installation

Step 1   Press the release button and pull the blank out of the drive bay.

Step 2   Remove the plastic hard disk tray.

Step 3   Slide hard disk into blank and secure it with screws.

Step 4   To replace the hard drive blank, slide the blank into the bay until it locks into place. Connect cable and power.

Step 5   Place the hard disk into the server system.

Step 3-7: FAN Duct Removal and Installation

Step 1   Pull up the screw-holder and lossen the thumbscrews. Lift up to remove the fan duct.

Step 2   For FAN Duct Installation, place the fan duct on the top of heat sinks. Fasten the screws to the
locked position and push down the screw-holders.
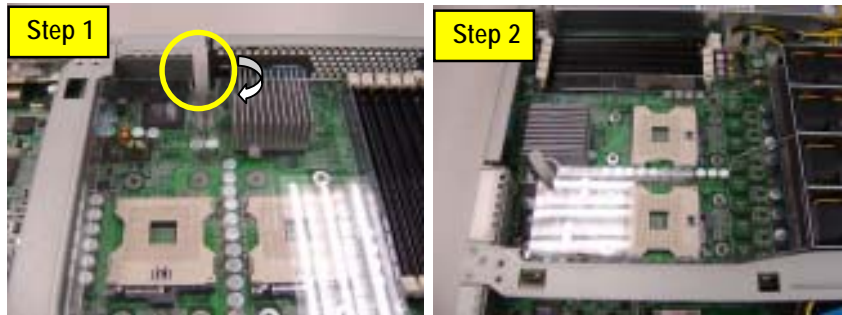
Chapter 4 Appearance of GS-SR168

4-1: Front View of GS-SR168
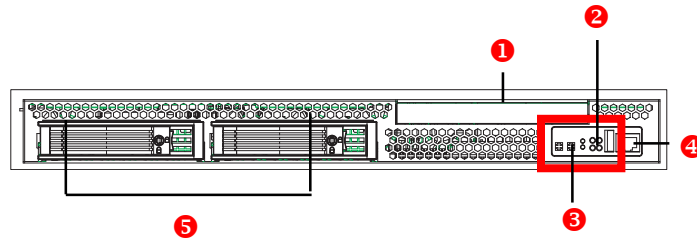
❶	Slim Type CD-ROM
❷	USB Connector
❸	LEDs
❹	RJ45 (For COM2)
❺	Easy swap SATA HDDs

4-2: Rear View of GS-SR168
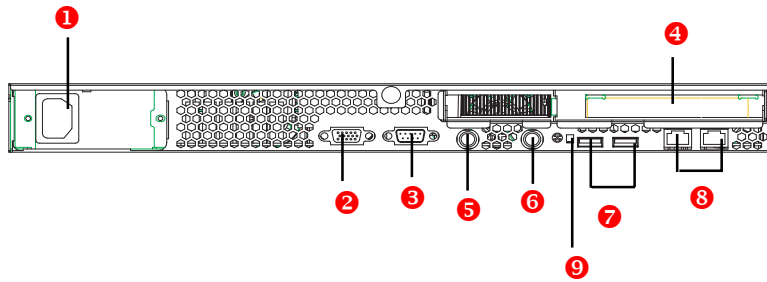
❶	Power
❷	VGA Port
❸	COM Port
❹	Riser Slot
❺	Keyboard Connector
❻	Mouse Connector
❼	USB Connectors
❽	LAN 1 & 2 Ports
❾	ID Switch

4-3: Back Plane Borad Layout Introduction
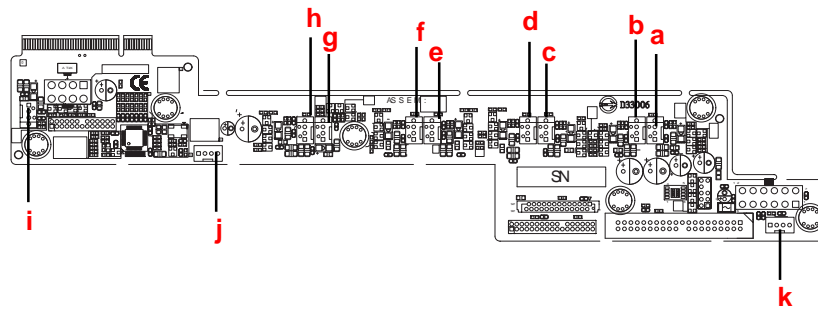
a	DF1 (Fan Connector)
b	DF2 (Fan Connector)
c	DF3 (Fan Connector)
d	DF4 (Fan Connector)
e	DF5 (Fan Connector)
f	DF6 (Fan Connector)
g	DF7 (Fan Connector)
h	DF8 (Fan Connector)
i	UF9 (Power Fan Connector)
j	Serial ATA Power Connector
k	IDE Power Connecor

4-4: Switch and LED Indicators Introduction
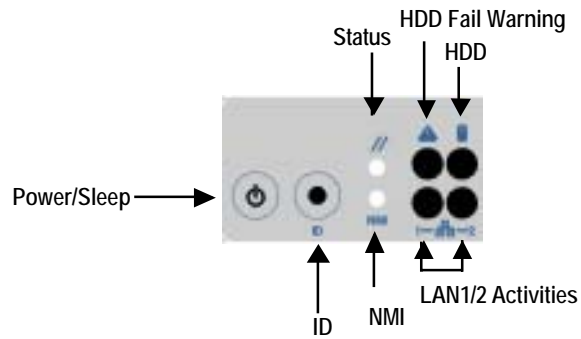
Name	Color	Condition	Description
Power	Green	On	Power On
	Green	Blink	Sleep (S1)
	Amber	Off	Power Off (S4/S5)
HDD	Green	Blink	Hard Disk Drive Access
	--	Off	No Access
LAN1	Green	On	LAN Link / No access
Activity	Green	Blink	LAN access
	--	Off	Idle
LAN2	Green	On	LAN Link / No access
Activity	Green	Blink	LAN access
	--	Off	Idle
Identification	Blue	On	Unit selected for identification
	--	Off	No identification

Name	IPMI	Color	Condition	Description
Status	Without	Green	On	System Ready
	IPMI	Amber	On	System Not Ready
	With	Green	On	System Ready/System Healthy
	IPMI	Amber	On	System Not Ready/ Critical Fans, Voltage, Temperature Failure

4-5: LAN LED Description
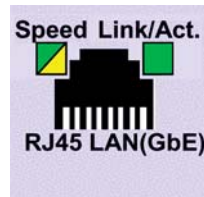
Name	Color	Condition	Description
LAN	Green	ON	LAN Link / no Access
Link/Activity	Green	BLINK	LAN Access
	-	OFF	Idle
GbE LAN	Yellow	ON	1Gbps connection
Speed	Green	ON	100Mbps connection
	-	OFF	10Mbps connection

4-6 : Connector Icon Description

Suggest Icon	Description
	Keyboard
	VGA
	Mouse
	LAN
	Serial Port
	USB

Chapter 5 Motherboard Layout & Jumper Setting

5-1: GA-9IVDPL Motherboard Layout
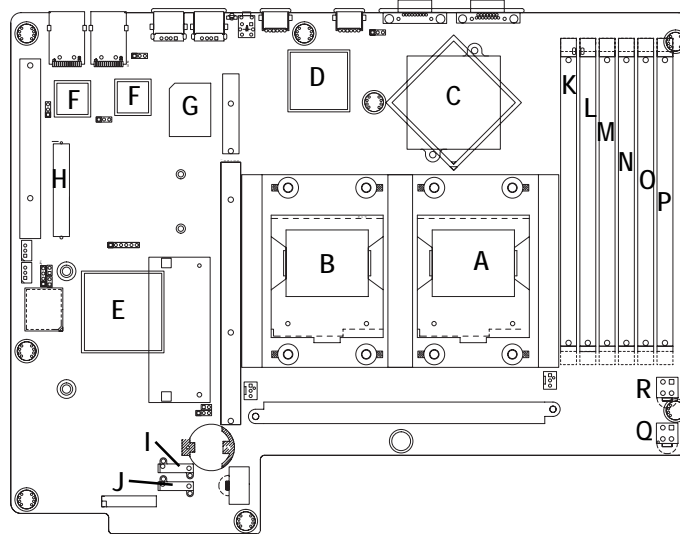
A	CPU 0	O	DDRII A3
B	CPU1	P	DDRII B3
C	Intel MCH E7320	Q	ATX1
D	ATI Rage-XL	R	ATX2
E	Intel 6300ESB		
F	Intel 82541		
G	IT8712 F IX		
H	IPMI Connector (Optional)		
I	SATA1 (Serial ATA Connector)		
J	SATA2 (Serial ATA Connector)		
K	DDRII A1		
L	DDRII B1		
M	DDRII A2		
N	DDRII B2		

5-2: Jumper Setting

CLR_CMOS ((Clear CMOS Function)

You may clear the CMOS data to its default values by this jumper.
Default value doesn't include the "Shunter" to prevent from improper use this jumper.
To clear CMOS, temporarily short 1-2 pin.
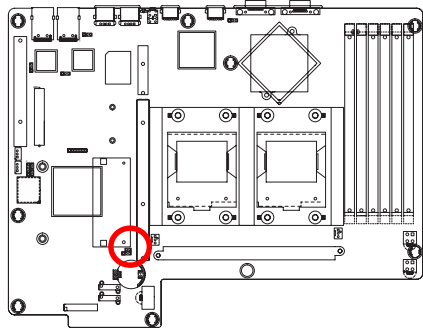
1 ▣▣·   1-2 close: Clear CMOS

1 ·▣▣   2-3 close: Normal (Default value)

Chapter 6 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERINGSETUP

Power ON the computer and press <F2> immediately will allow you to enter Setup.

CONTROLKEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Reserved
<F3>	Reserved
<F4>	Reserved
<F6>	Reserved
<F7>	Reserved
<F8>	Reserved
<F9>	Load the Optimized Defaults
<F10>	Save all the CMOS changes, only for Main Menu

GETTINGHELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

● **Main**

This setup page includes all the items in standard compatible BIOS.

● **Advanced**

This setup page includes all the items of AMI special enhanced features.

(ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

● **Security**

Change, set, or disable password. It allows you to limit access the system and setup.

● **Server**

Server additional features enabled/disabled setup menus.

● **Boot**

This setup page include all the items of first boot function features.

● **Exit**

There are five optionsin this selection: Exit Saving Changes, Exit Discarding Changes, Load Optimal Defaults, Load Failsafe Defaults, and Discard Changes.

Main

Once you enter Phoenix BIOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

```
                        PhoenixBIOS Setup Utility

  Main        Advanced      Security      Server    Boot       Exit

  System Time:              [00:13:12]              Item Specific Help

  System Date:              [01/01/2005]


  ▶ IDE Channel 0 Master    [80026MB]
  ▶ IDE Channel 0 Slave     [None]
  ▶ IDE Channel 2 Master    [CD-ROM]
  ▶ IDE Channel 3 Slave     [None]
    ▶ System Information




  F1: Help          ↑↓: Select Item      + -: Change Values   F5: Setup Defaults
  Esc: Exit         ←→: Select Menu      Enter: Select ▶ Sub-Menu   F10: Save&Exit
```

Figure 1: Main

↩ **System Time**

The time is calculated based on the 24-hour military time clock. Set the System Time (HH:MM:SS)

↩ **System Date**

Set the System Date. Note that the "Day" automatically changed after you set the date.

(Weekend: DD: MM: YY) (YY: 1099~2099)

☞ IDE Channel 0 Master, Slave / Channel 1 Master, Slave, Serial ATA

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

➜ **TYPE**

1-39: Predefined types.

Users: Set parameters by User.

Auto: Set parameters automatically. (Default Vaules)

CD-ROM: Use for ATAPI CD-ROM drives or double click [Auto] to set all HDD parameters automatically.

ATAPI Removable: Removable disk drive is installed here.

➜ **Multi-Sector Transfer**

This field displays the information of Multi-Sector Transfer Mode.

Disabled: The data transfer from and to the device occurs one sector at a time.

Auto: The data transfer from and to the device occurs multiple sectors at a time if the device supports it.

➜ **LBA Mode**	This field shows if the device type in the specific IDE channel support LBA Mode.
➜ **32-Bit I/O**	Enable this function to max imize the IDE data transfer rate.
➜ **Transfer Mode**	This field shows the information of Teansfer Mode.
➜ **Ultra DMA Mode**	This filed displays the DMA mode of the device in the specific IDE channel.

☞ System Information

This category includes the information of Processor Type, Speed, Extended memory, BIOS Version, BIOS Date, System Product Name, System serial number, System version, System UUID, Main Board ID, and Main Board Serial number.

Advanced

About This Section: Advanced

With this section, allowing user to configure your system for basic operation. User can change the processor options, chipset configuration, PCI configuration and chipset control.

```
┌──────────────────────────────────────────────────────────────────────┐
│                     PhoenixBIOS Setup Utility                          │
├──────────────────────────────────────────────────────────────────────┤
│ Main       Advanced      Security      Server    Boot       Exit       │
├─────────────────────────────────────────────┬────────────────────────┤
│  ▶ PCI Configuration                         │    Item Specific Help   │
│                                              │                         │
│  ▶ Advanced Chipset Control                  │                         │
│                                              │                         │
│  ▶ Advanced Processor Option                 │                         │
│                                              │                         │
│  ▶ Peripheral Configuration                  │                         │
│                                              │                         │
│  ▶ Hardware Monitor                          │                         │
│                                              │                         │
│  Reset Configuration Data        [No]        │                         │
│                                              │                         │
│  ClkGen Spread Spectrum          [Disabled]  │                         │
│                                              │                         │
│  System After AC Back            [Pre-State] │                         │
│                                              │                         │
│  Extended Memory Testing         [Enabled]   │                         │
│                                              │                         │
│  Network Server                  [Enabled]   │                         │
│                                              │                         │
│                                              │                         │
├─────────────────────────────────────────────┴────────────────────────┤
│ F1: Help          ↑↓: Select Item    + -: Change Values   F5: Setup Defaults │
│ Esc: Exit         ←→: Select Menu    Enter: Select ▶ Sub-Menu   F10: Save&Exit │
└──────────────────────────────────────────────────────────────────────┘
```

Figure 2: Advanced

PCI Configuration

PhoenixBIOS Setup Utility	
PCI Configuration	Item Specific Help
▶ Embedded Vedio Controller ▶ Embedded NIC ▶ Embedded NIC (Gbit#2)	
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults Esc: Exit ←→: Select Menu Enter: Select ▶ Sub-Menu F10: Save&Exit	

Figure 2-1: PCI Configuration

☞**Embedded Video Controller**

▶ **Onboard VGA Control**

▸Enabled   Enable onboard VGA device. (Default value)

▸Disabled   Disable this function.

☞**Embedded NIC (Gbit #1 / 2)**

▶ **Onboard LAN Control**

▸Enabled   Enable onboard LAN 1 / 2 device. (Default value)

▸Disabled   Disable this function.

▶ **Option ROM Scan**

▸Enabled   Enableing this item to initialize device expansion ROM.

▸Disabled   Disable this function. (Defualt value)

Advanced Chipset Control

PhoenixBIOS Setup Utility	
Advanced Chipset Control	Item Specific Help
USB Controller [Enabled]	
Legacy USB Support [Disabled]	
Force Compliance Mode [Enabled]	
PCI-E port A Device 2 [Enabled]	
4GB PCI Hole Granularity [128MB]	
Wake On LAN [Enabled]	
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults Esc: Exit ←→: Select Menu Enter: Select ▶ Sub-Menu F10: Save&Exit	

Figure 2-2: Advanced Chipset Control

✆USB Controller

This item allows users to enable or disable the USB device by setting item to the desired value.

    ▸Enabled   Enable USB controller. (Default value)

    ▸Options   Disbale this function.

✆Legacy USB Support

This option allows user to function support for legacy USB.

    ▸Enabled   Enables support for legacy USB.

    ▸Disabled   Disables support for legacy USB. (Default Value)

☞**Force Compliance Mode**

This option allows user to function PCI-E Compliance mode by setting item to desired value.

➤Enabled   Enables PCI-E Force Compliance mode. (Default Value)

➤Disabled   Disables this function.

☞**PCI-E port A Device 2**

Force PCI Express v1.0 Compability Mode, this PCI-E port A by setting to desired value.

➤Force PCI Express 1.0   Force PCI Express v1.0 Compability Mode.

➤Enabled   Enables PCI-E port A Device2 (Default Value)

➤Disabled   Disables this function.

☞**4GB PCI Hole Granularity**

Select the granularity of PCI hole for PCI resource. If MTRRS are not enough, we may use this option to reduce the MTRR occupation.

➤128MB   Select 128MB as granularity of PCI hole. (Default value)

➤256MB   Select 256MB as granularity of PCI hole.

☞**Wake On LAN**

This option allow user to determine the action of the system when a LAN wake up occurs.

➤Enabled   Enable Wake On LAN. (Default value)

➤Disabled   Disable this function.

Note: This item must enabled if you're running under Windows operating system.

Advanced Processor Option

PhoenixBIOS Setup Utility		
Advanced Processor Option		Item Specific Help
Hyper Threading Technology	[Enabled]	
Set Max Ext CPUID = 3	[Disabled]	
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults Esc: Exit ←→: Select Menu Enter: Select ▶ Sub-Menu F10: Save&Exit		

Figure 2-3: Advanced Processor Option

☞ **Hyper Threading Technology**

▸ Enabled	Enables Hyper-Threading Technology Feature when using Windows XP and Linux 2.4x operating systems that are optimized for Hyper-Threading technology. (Default value)
▸ Disabled	Disables Hyper-Threading Technology when using other operating systems.

☞ **Set Max Ext CPUID = 3**

Set MAX CPUID extended function value to 3.

▸ Enabled	Enable Set Max Ext CPUID = 3 function.
▸ Disabled	Disable this function. (Default value)

Peripheral Configuration

PhoenixBIOS Setup Utility		
Peripheral Configuration		Item Specific Help
Serial Port A	[Enabled]	
Base I/O address/IRQ	[3F8/IRQ4]	
Serial Port B	[Enabled]	
Base I/O address/IRQ	[2F8/IRQ3]	
Floppy disk connector	[Enabled]	
Floppy Check	[Enabled]	
Parallel ATA	[Both]	
Serial ATA	[Enabled]	
Native Mode Operation	[Auto]	
SATA RAID Enable	[Disabled]	
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults		
Esc: Exit ←→: Select Menu Enter: Select ▶ Sub-Menu F10: Save&Exit		

Figure 2-4: Peripheral Configuration

☞ Serial Port A

This allows users to configure serial prot A by using this option.

▸ Disabled   Disable the configuration.

▸ Enabled   Enable the configuration (Default value)

▸ **Base I/O Address/IRQ**

▸ 3F8/IRQ4   Set IO address to 3F8. (Default value)

▸ 2F8/IRQ3   Set IO address to 2F8.

▸ 3E8/IRQ4   Set IO address to 3E8.

▸ 2E8/IRQ3   Set IO address to 2E8.

☞Serial Port B

This allows users to configure serial prot B by using this option.

➧Disabled   Disable the configuration.

➧Enabled   Enable the configuration (Default value)

▶ **Base I/O Address/IRQ**

➧3F8/IRQ4   Set IO address to 3F8.

➧2F8/IRQ3   Set IO address to 2F8. (Default value)

➧3E8/IRQ4   Set IO address to 3E8.

➧2E8/IRQ3   Set IO address to 2E8.

☞Floppy disk controller

➧Enabled   Enable the floppy disk controller.   (Default value)

➧Disabled   Disable the device.

☞Floppy Check

➧Enabled   Enable the device to verify floppy typer when system boot.

                            (Default value)

➧Disabled   Disable the this function.

☞Parallel ATA

➧Disabled   Disable the device.

➧Both   Select both Channel 0 and Channel 1 as Parallel ATA.

                            (Default value)

➧Channel 0   Select both Channel 0 as Parallel ATA.

➧Channel1   Select both Channel 1 as Parallel ATA.

☞Serial ATA

⏩Enabled   Enable Serial ATA device. (Default value)

⏩Disabled   Disable the Serial ATA.

☞Native Mode Operation

This option allows user to set the native mode for ATA function.

Note that certain OS is not supported under Native Mode.

⏩Auto   Auto detected. (Default value)

⏩Serial ATA   Set Native mode to Serial ATA.

⏩Parallel ATA   Set Native mode to Parallel ATA.

☞SATA RAID Enable

⏩Enabled   Enable the SATA RAID function.

⏩Disabled   Disable the device. (Default value)

☞Reset Configuration Data

    ▶Yes   Clear the Extended System Configuration Data (ESCD) area.

    ▶No   Disable this function. (default value)

☞Clk Gen Spread Spectrum

    ▶Enabled   Enable ClkGen Spread Spectrum.

    ▶Disabled   Disabled this function. (Default value)

☞System After AC Back

Set the mode od operation if an AC/Power loss occurs.

    ▶Power On   Power on system without pressing power button.

    ▶Stay Off   Keep the power off until the power button is pressed.

    ▶Pre- State Set system to the last sate when AC power is removed. Do not power on system when AC power is back. (Default value)

☞Extended Memory Testing

Determine which type of tests will be performed extended memory. (above 1M)

    ▶Enabled   Enable Extended Memory Testing. (Default value)

    ▶Disabled   Disable this function.

☞Network Server

    ▶Enabled   System will be secured at boot to prevent tampering during network operation. (Default value)

    ▶Disabled   Disable this function.

Hardware Monitor

PhoenixBIOS Setup Utility		
Hardware Monitor		Item Specific Help
CPU 1 Temperature	38C/100F	
CPU 2 Temperature	38C/100F	
Backboard Temperature 1	33C/091F	
Backboard Temperature 2	33C/091F	
Backboard Temperature 3	33C/091F	
▶ Voltage		
▶ Fan Monitor		
F1: Help ↑↓: Select Item + -: Change Values F5: Setup Defaults Esc: Exit ←→: Select Menu Enter: Select ▶ Sub-Menu F10: Save&Exit		

Figure 2-5: Hardware Monitor

☞ **CPU 1&2/Backboard 1/2/3 Temperature**

▸Display the current CPU1/2 temperature, Backboard 1/2/3 ambient temperature.

☞ **Voltage: VCORE 1&2/ 3.3V/ 5V / +12V / 3.3VSB / 1.5VSB / 12V / VBAT/ 5VSB / 1.5V / 1.8V**

▸Detect system's voltage status automatically.

☞ **FAN(RPM)**

▸Display the current CPUs, and Power FAN speed.

Security

PhoenixBIOS Setup Utility				
Main	Advanced	Security	Server	Boot	Exit

Supervisor Password Is:	Clear	Item Specific Help
User Password Is:	Clear	
Set Supervisor Password	[Enter]	
Set User Password	[Enter]	
Password On Boot	[Disabled]	

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 3: Security

⏶ About This Section: Security

In this section, user can set either supervisor or user passwords, or both for different level of password securities. In addition, user also can set the virus protection for boot sector.

☞Set Supervisor Password

You can install and change this options for the setup menus. Type the password up to 6 characters in lengh and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password or press <Enter> key to disable this option.

☞Set User Password

You can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password up to 6 characters in lengh and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password.

☞Password on boot

Password entering will be required when system on boot.

> ▸ Enabled   Requries entering password when system on boot.
>
> ▸ Disabled   Disable this function. (Default value)

Server

PhoenixBIOS Setup Utility					
Main	Advanced	Security	Server	Boot	Exit

		Item Specific Help
▶ Console Redirection		
Halt On	[Mid]	
Memory RAS Feature Control	[Standard]	
Clear Mem. ECC Error Info.	[Disabled]	

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 4: Server

Console Redirection

PhoenixBIOS Setup Utility		
Console Redirection		Item Specific Help
Com Port Address		
Baud Rate	[19.2K]	
Console Type	[Direct]	
Flow Control	[CTS/RTS]	
Continue C.R after POST	[Off]	

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 4-1: Console Redirection

☞ Com Port Address

If this option is set to enabled, it will use a port on the motherboard.

➤ On-board COMA   Use COMA as he COM port address.

➤ On-board COMB   Use COMB as he COM port address.

➤ Disabled   Disable this function. (Default value)

☞ Baud Rate

This option allows user to set the specified baud rate.

➤ Options   300, 1200, 2400, 9600, 19.2K, 38.4K, 57.6K, 115.2K.

☞ Console Type

This option allows user to select the specified console type. This is defined by IEEE. PC-ANSI is the standard PC-type terminal. Note that for VT100+, you must select English as your languuage. And VT-UTF8 uses unicode.

➤ Options   vt100, vt100+, vt100 8bit, PC ANSI 7bit, PC-ANSI, VT-UTF8.

☞ Flow Control

Enables Flow Control when EMP is dahring the same serial port as console redirection, the flow control must be set to CTS/RTS or CTS/RTS+CD depending on whether a modem is used.

➤ None   Not supported.

➤ XON/OFF   Software control.

➤ CTS/RTS   Hardware control. (Default values)

☞ Continue C.R. after POST

This option allows user to enable console redirection after O.S has loaded.

➤ On   Enable console redirection after O.S has loaded.

➤ Off   Disable this function. (Default value)

☞ **Halt On**

The category determines whether the computer will stop if an error is detected during power up.

▸▸ NO Errors	The system boot will not stop for any error that may be detected and you will be prompted.
▸▸ All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped.
▸▸ Mid	The system boot will not stop for a keyboard or disk error; it will stop for all other errors. (Default value)

☞ **Memory RAS Feature Control**

Select specified features for DIMMs. Sparing or Memory Mirroring.

▸▸ Standard	Select Standard as Memory RAS Feature. (Default value)
▸▸ Sparing	This feature allows user to uses a spare online bank to provide DIMM fail-over capabilities when a pre-defined threshold of single-bit correctable errors is reached.

☞ **Clear Mem. ECC Error Info**

▸▸ Enabled	Enable Clear memory ECC error information function.
▸▸ Disabled	Disable this function. (Default value)

Boot

PhoenixBIOS Setup Utility					
Main	Advanced	Security	Server	Boot	Exit
+ CD-ROM Drive				Item Specific Help	
+ Hard Drive					
Removable Device					
F1: Help	↑↓: Select Item		+ -: Change Values	F5: Setup Defaults	
Esc: Exit	←→: Select Menu		Enter: Select ▶ Sub-Menu	F10: Save&Exit	

Figure 5: Boot

♦ About This Section: Boot

The "Boot" menu allows user to select among four possible types of boot devices listed using the up and down arrow keys. By applying <+> and <Space> key, you can promote devices and by using the <-> key, you can demote devices. Promotion or demotion of devices alerts the priority that the system uses to search for boot device on system power on.

☞ Boot Device Priority

▶ Removable Device / Hard Drive / CD-ROM Drive/

These three fields determines which type of device the system attempt to boot from after **PhoenixBIOS Post** completed. Specifies the boot sequence from the available devices. If the first device is not a bootable device, the system will seek for next available device.

Exit

PhoenixBIOS Setup Utility					
Main	Advanced	Security	Server	Boot	Exit
Exit Saving Changes				Item Specific Help	
Exit Discarding Changes					
Load Setttup Default					
Discard Changes					
Save Changes					
F1: Help　　　　↑↓: Select Item　　　+ -: Change Values　　F5: Setup Defaults					
Esc: Exit　　　←→: Select Menu　　　Enter: Select ▶ Sub-Menu　　F10: Save&Exit					

Figure 6: Exit

♪　About This Section: Exit

Once you have changed all of the set values in the BIOS setup, you should save your chnages and exit BIOS setup program. Select **"Exit"** from the menu bar, to display the following sub-menu.

☛ **Exit Saving Changes**
☛ **Exit Discarding Changes**
☛ **Load Setttup Default**
☛ **Discard Change**
☛ **Save Changes**

↪Exit Saving Changes

This option allows user to exit system setup with saving the changes.

Press <Enter> on this item to ask for the following confirmation message:

Pressing 'Y' to store all the present setting values tha user made in this time into CMOS.

Therefore, whenyou boot up your computer next time, the BIOS will

re-configure your system according data in CMOS.

> Setup Confirmation
>
> Save configuration changes and exit now?
>
> [Yes]   [No]

↪Exit Discarding Changes

This option allows user to exit system setup without changing any

previous settings values in CMOS. The previous selection remain in effect.

This will exit the Setup Utility and restart your compuetr when selecting this option.

Press <Enter> on this item to ask for confirmation message.

> Setup Warning
>
> Load default configuration now?
>
> [Yes]   [No]

↪Load Settup Default

This option allows user to load default values for all setup items.

When you press <Enter> on this item, you will get a confirmation dialog box with a message

as below:

> Setup Confirmation
>
> Load default configuratin now?
>
> [Yes]   [No]

☞Discard Changes

This option allows user to load previos values from CMOS for all setup item.
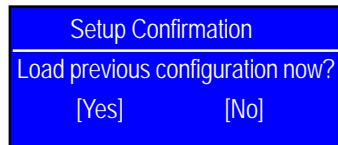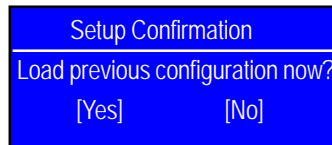
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:

```
         Setup Confirmation
 Load previous configuration now?
     [Yes]          [No]
```

☞Save Changes

This option allows user to save setup dat ato CMOS.

When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:

```
         Setup Confirmation
 Load previous configuration now?
     [Yes]          [No]
```

Press [Yes] to save setup daya to CMOS.

Chapter 7 Appendix

7-1: Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BBS	BIOS Boot Specification
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request

Acronyms	Meaning
I/O	Input / Output
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture
LAN	Local Area Network
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Instrument Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory
SMP	Symmetric Multi-Processing
SMI	System Management Interrupt
USB	Universal Serial Bus
VID	Voltage ID
ZCR	Zero Channel RAID