GW100
USER MANUAL

Arima Computer Corp.
Building Your Competitive Advantage

TABLE OF CONTENTS:

Legal Disclaimer

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Always read the safety instructions carefully.

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Technical Support

If a problem arises with your system during installation or operation and is unable to be resolved from the user manual, consult the following list of resources for help:

- ✓ Contact the place of purchase for help. This is the recommended solution as they can provide the quickest assistance.
- ✓ Visit Arima Computer Corp. website for up to the minute FAQ, guides and updates. The website can be found at: http://www.arima.com.tw/server
- ✓ Or contact our support staff at: server@arima.com.tw

About this User Guide

This manual contains some special icons that accompany special sections that are meant to help you along in the installation process. The special sections contain useful and/or critical information that you should know. Watch for these icons as you read through the manual.

Type of icons:	Description:
NOTE 	This icon indicates useful and timely information that will aid you in the setup.
WARNING 	This icon indicates information on dangerous and/or costly behavior to avoid.

Safety Instruction

- ✓ Keep this manual for future reference.
- ✓ Keep the equipments in a safe, cool, dry place.
- ✓ Perform the installation on a dry, flat surface.
- ✓ Ground yourself by touching a plugged-in power supply, which displaces static electricity.
- ✓ Adjust the power source to the proper voltage before connecting the equipment to the power outlet.
- ✓ Place the power cord in such a manner as to ensure that no one can step on it or trip over it.
- ✓ Always unplug the power cord when performing installation.
- ✓ Do not have liquid nearby as electrical shock can occur if liquid spills onto the equipment.
- ✓ Pay attention to the warnings in the installation instructions when appropriate.
- ✓ In the following cases, do not try to fix the problem yourself, contact a party in Technical Support
  - The power cord or plug is damaged.
  - Liquid has been spilled onto the equipment.
  - Obvious sign of damage can be detected on the equipment.

	Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

Chapter 1. Getting Started

1.1 Congratulations

Congratulations on your purchase of our Arima GW100, one of the most versatile and powerful motherboard solutions available for the Pentium processors. The GW100 is equipped with the flexibility of supporting 533/800/1066 MHz FSB, PCI Express X16, and four SATA 3Gbps ports. The GW100 also benefits with another PCI Express x8 (PCI Express x4 signal) slot, onboard single Gigabit Ethernet ports (x1 PCI Express), and dual channel DDR2 DIMM memory slots. Wielded with so many powerful components, GW100 will sure satisfy your server/workstation needs.

1.2 Unpacking

Arima Computer Corp. provides a number of accessories for your convenience. Below is a checklist of the things that are included in this purchase:

Quick Installation Guide
Driver and user Guide CD
1 x IDE cable
1 x I/O shield
4 x SATA cables
2 x SATA power cable
1 bag of jumpers (3 pcs)

1.3 Features Highlight

CPU:
- ✓ Supports 533/800/1066 MHz Front Side Bus

CHIPSET:
- ✓ Intel Glenwood 955X (MCH) Chipset

SYSTEM MEMORY:
- ✓ Four 240-pin DDR2 DIMM sockets

EXPANSION SLOTS:
- ✓ Equipped with both PCI Express x16 and PCI Express x8 (Signal of PCI-E x4) slots

STORAGE:
- ✓ Total support of hard disk formats from SATA II, SATA, and to ATA.

INTEGRATED LAN CONTROLLER:
- ✓ Marvell Single/Dual Gigabit Ethernet Ports

SYSTEM MANAGEMENT:
- ✓ SMBIOS 2.3.3 and DMI 2.0 compliant
- ✓ 64 bit OS ready
- ✓ Soft Power-down
- ✓ Multiple boot support (with BIOS Boot Specification v3.1 (BBS) support
- ✓ Wake on LAN

1.4 Motherboard Specification

Processors
- ✓ Supports Intel UP processors (Prescott/Smithfield/Cedar Mill) LGA775
- ✓ Supports Intel Celeron D LGA 775
- ✓ Supports 533/800/1066 MHz Front Side Bus
- ✓ Supports EM64T (Extended Memory 64 Technology)
- ✓ Onboard 3-phase VRD 11/10.1

Chipsets
- ✓ Intel Glenwood (MCH) chipset
- ✓ MCH + ICH7R + FWH
- ✓ SMSC 47M182 Super I/O chip
- ✓ SMSC EMC6D103 Hardware Monitor chip

Memory
- ✓ Four 240-pin 1.8-Volt DDR2 DIMM sockets
- ✓ Dual channel memory bus
- ✓ Supports DDR2-533/667 memory
- ✓ Supports Un-Buffered ECC type memory modules only
- ✓ Supports up to 8 GB
- ✓ Supports single DIMM operation

Expansion Slots
- ✓ One PCI-Express x16 slot
- ✓ One PCI-Express x8 slot (with x4 signal)
- ✓ Three 32-bit 33MHz (5V) PCI slot
- ✓ Total of five usable slots

Integrated Graphics (Optional)
- ✓ ATI Rage XL with 8M video RAM

Gigabit Ethernet Controller (Dual GbE as Optional)
- ✓ Marvell 88E8053 PCI-Express x1 Gigabit Ethernet Controller
- ✓ RJ-45 connector with LEDs
- ✓ PXE option ROM solution
- ✓ Two 2-pin headers for front panel LED output

ICH7R Integrated Serial ATA Controller (3.0Gb/s)
- ✓ 4 ports data transfers up to 3.0Gb/s (300MB/s)

ICH7R Integrated ATA Controller
- ✓ One PCI bus master channels for up to two enhanced IDE devices
- ✓ Support for Ultra DMA 100/66/33 IDE drives and ATAPI compliant devices
- ✓ Tri-state modes to enable swap bay

ICH7R USB 2.0
- ✓ Eight USB 2.0 ports (4 rear panel connectors and 4 front panel headers)

ICH7R Audio
- ✓ AC-Link with Realtek ALC655 / ALC650 Audio CODEC
- ✓ Support 5.1 channel with one 1x3 Audio connector

Super I/O
- ✓ SMSC 47M128 “PORT ANGELES” Super I/O chip

- ✓ One floppy connector supports two drives
- ✓ PS/2 mouse and PS/2 keyboard rear panel connectors
- ✓ Two 9-pin serial ports (one rear panel connector and one header)

Rear Panel I/O

- ✓ Stacked PS/2 mouse and PS/2 keyboard rear panel connectors
- ✓ One stacked dual USB-2.0 connectors with one stacked RJ-45 connector with LEDs
- ✓ One 1x3 Audio connector with 5.1/2.1 output
- ✓ One stacked dual USB-2.0 connectors
- ✓ One 9-pin serial connector
- ✓ One DB15 Video connector (optional)

BIOS

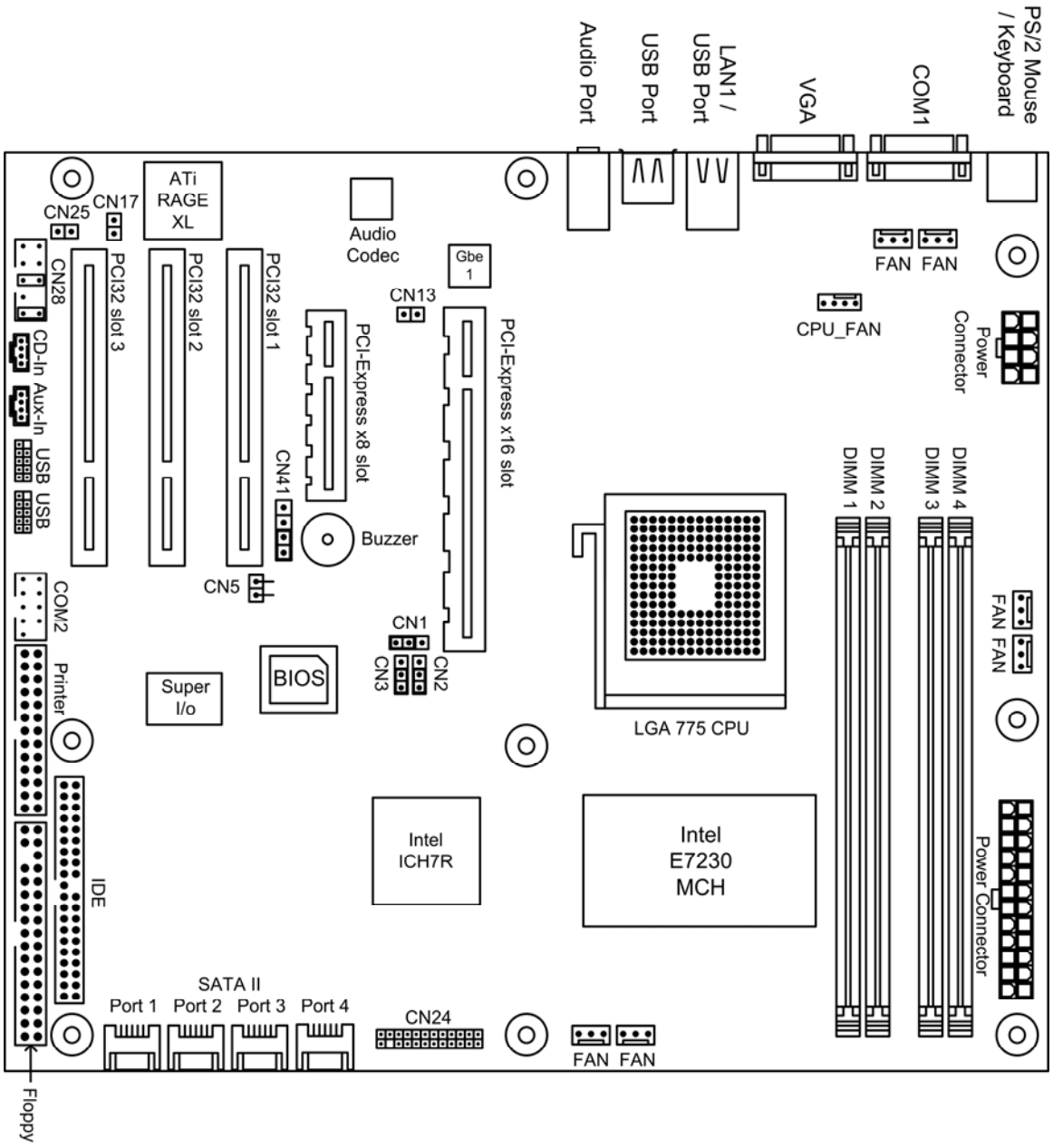
- ✓ 8 Mb Phoenix BIOS
- ✓ Legacy USB support
- ✓ SMBIOS 2.3.3 and DMI 2.0 compliant
- ✓ Soft Power-down
- ✓ Multiple boot support (with BIOS Boot Specification v3.1 (BBS) support)

Form Factor

- ✓ ATX form factor with size: 12" x 9.6" (6 layers)
- ✓ P4 12V power connectors (24pin + 4pin)

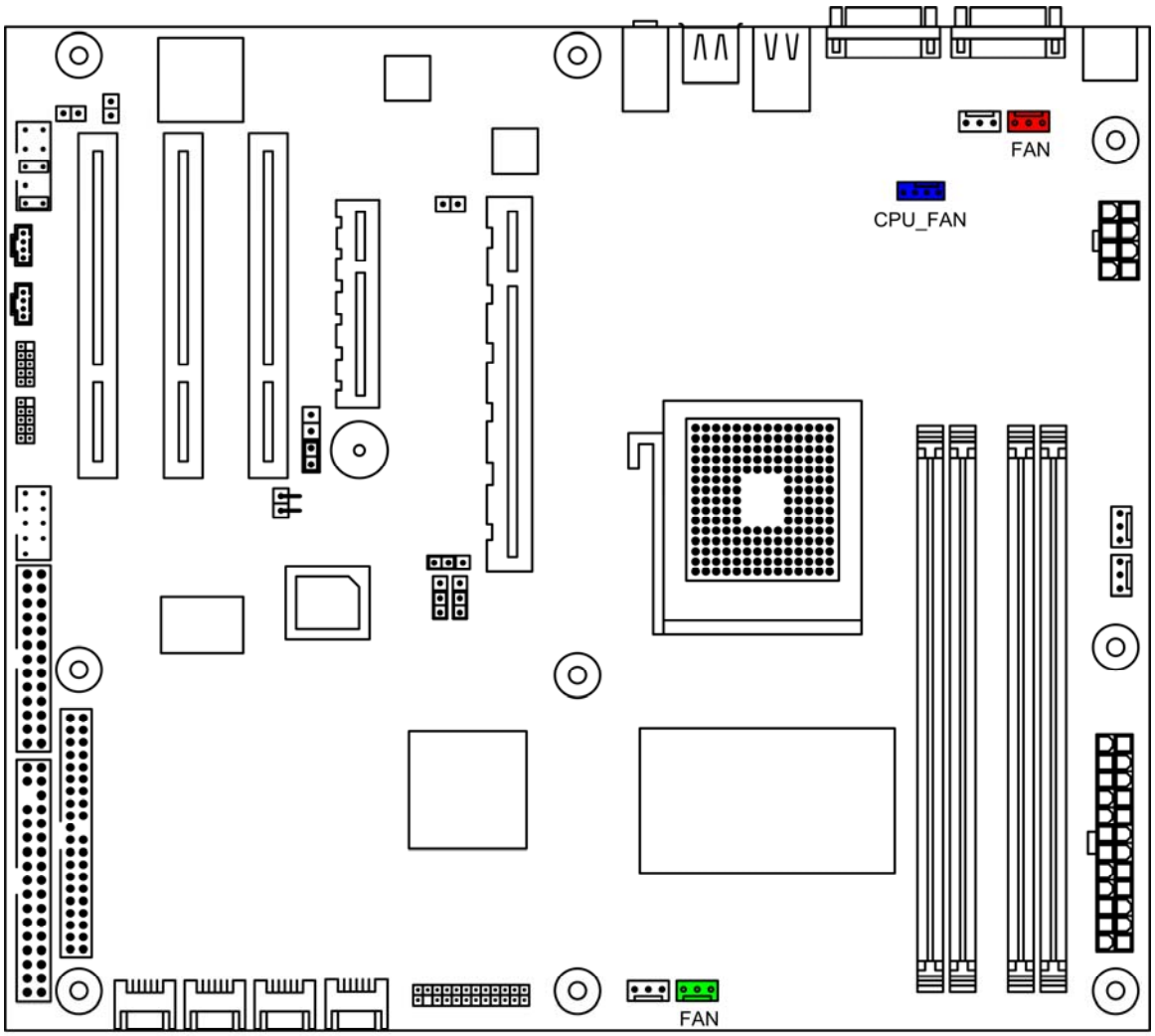
1.5 Motherboard Layout [Major Components]

The following diagram indicates all the major components of the motherboard.



1.6 Hardware Monitor

Two kinds of hardware monitoring are provided with the motherboard.
An SMSC EMC6D chip is used to provide dedicated monitoring of voltages, temperatures and fan RPM. Specifically, it monitors CN30, CN33, and CN35's voltages, CN 30's CPU temperature, and finally their fan RPM.



CN30 CPU Fan

CN33 Rear Chassis Fan

CN35 Front Chassis Fan

Chapter 2. Hardware Installation

2.1 Mounting the Motherboard

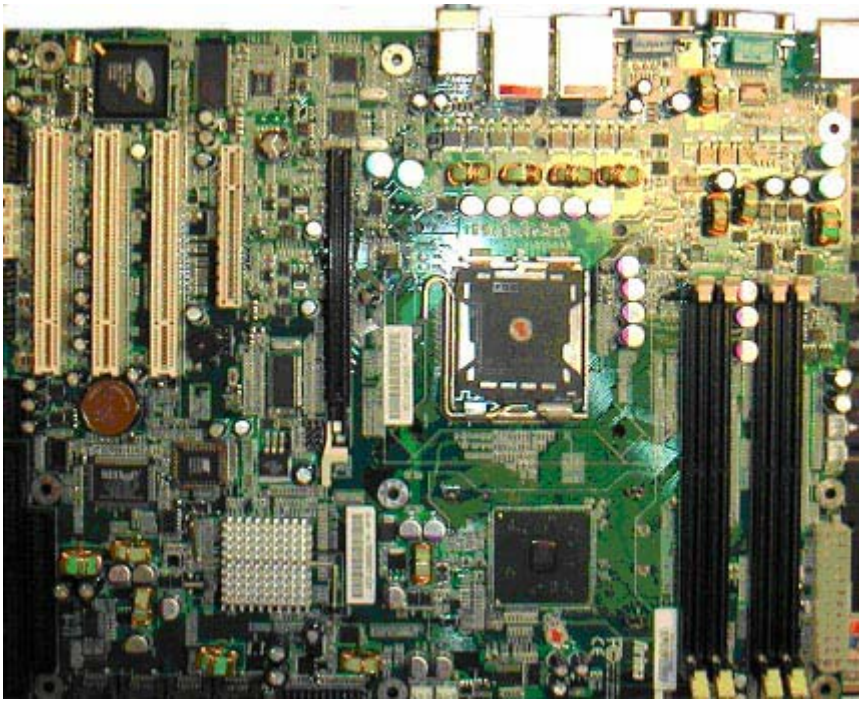
The GW100 confirms to the ATX specification format. Before continuing on with installation, please confirm that your chassis supports a standard ATX motherboard. If you are unsure, contact your dealer for more information.

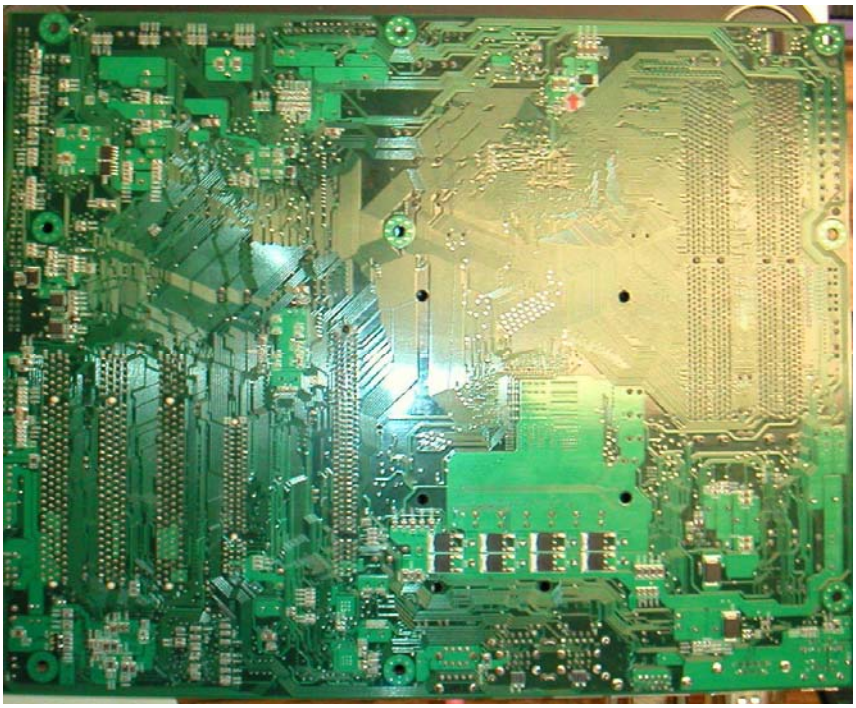
Precautions:

- ✓ Static electricity can damage components on your motherboard. Before touching the motherboard, discharge any static build-up in yourself by touching a grounded object.
- ✓ Disconnect your computer from any power supply if disassembly is needed.
- ✓ Try to avoid touching the surface or back of the motherboard, for chips and other components on the motherboard are very fragile.
- ✓ Before the motherboard is ready for immediate installation, place the motherboard on the Mylar Sheet (antistatic bag) in which the board was shipping in.
- ✓ Before installing, inspect the motherboard for any possible flaws.

2.2 Board Image

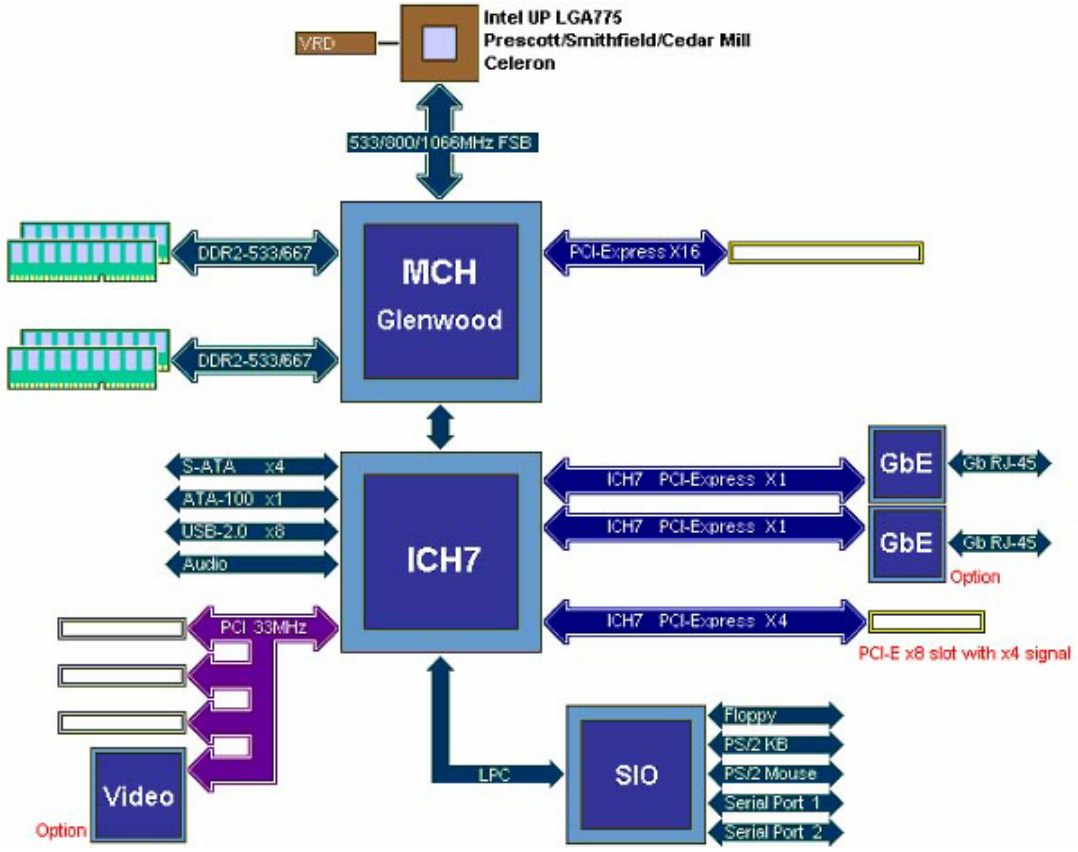
The following are pictures of the Arima 955X GW100 (Front and Back sides).





These pictures above are not actual pictures of your Arima 955X GW100, it is only a representation of the actual product. Due to engineering updates and board revisions, certain components may have changed or repositioned.

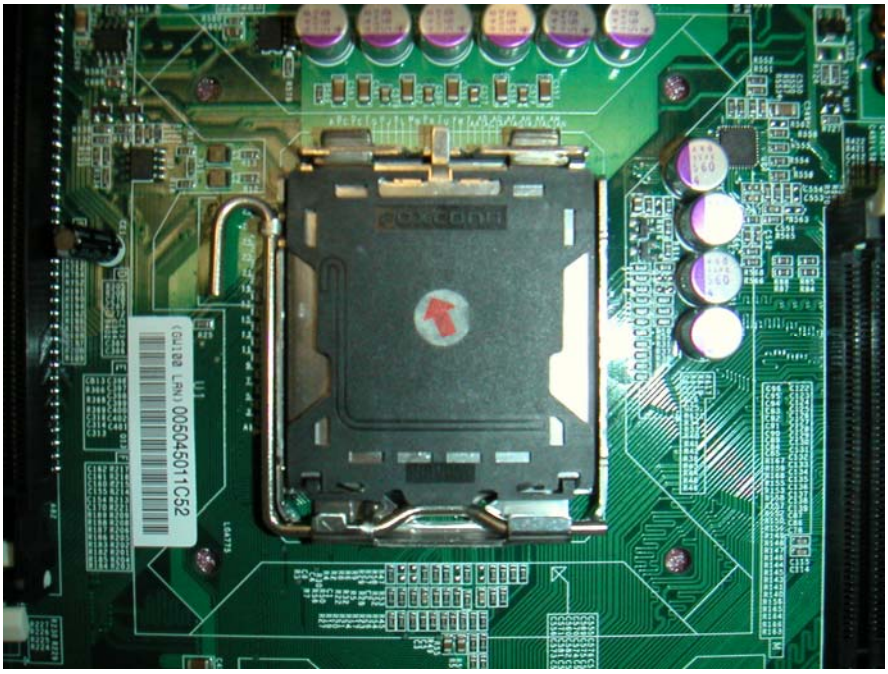
2.3 Block Diagram



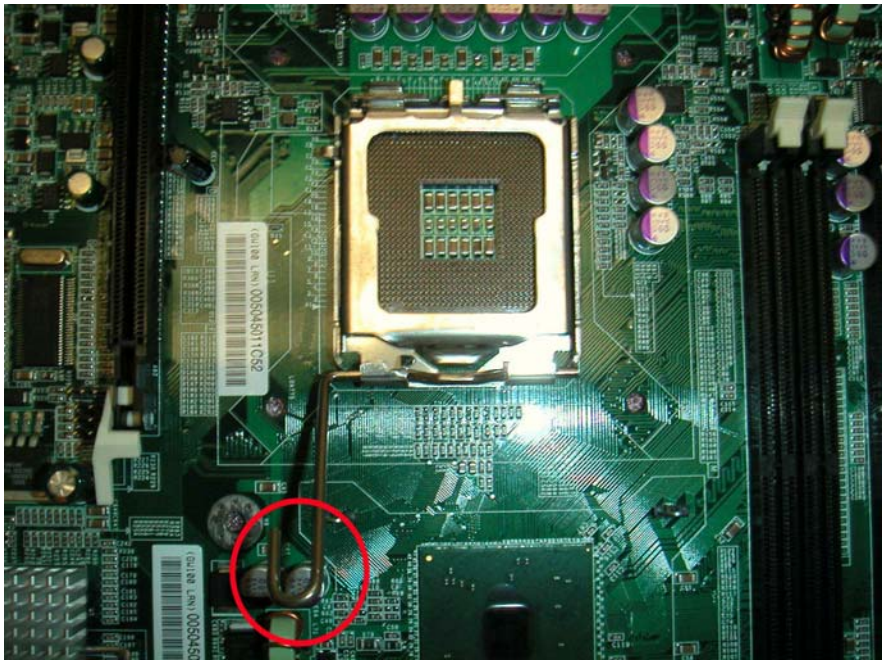
2.4 Installing the Processor

Procedure:
First read the instructions that came with the CPU. Follow the procedures below step by step.

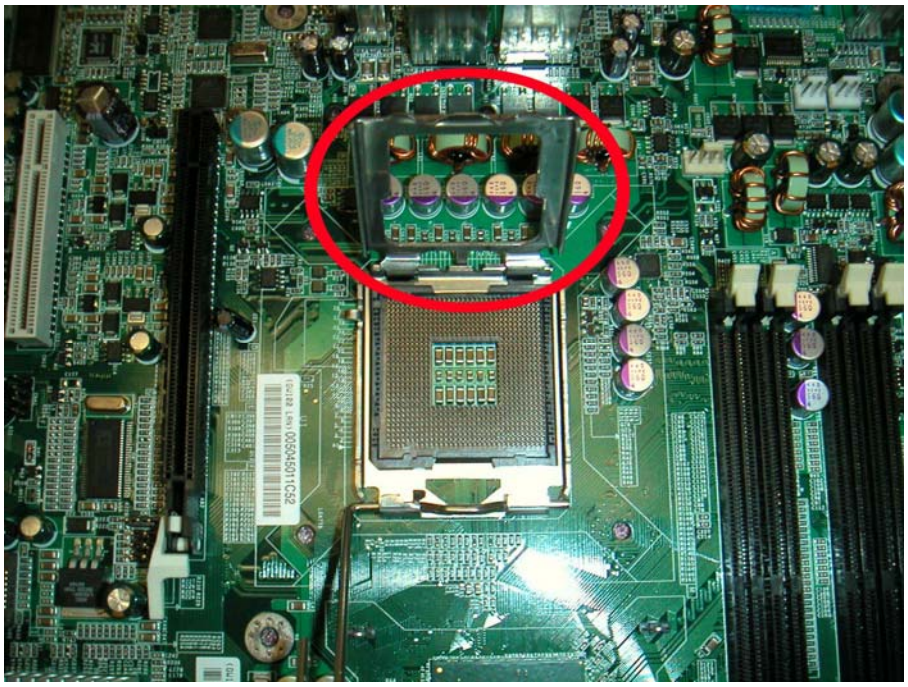
1. Locate the processor socket on the motherboard and carefully remove the protective cover.



2. Pull the lever out of its locked position and let it spring into its open position.

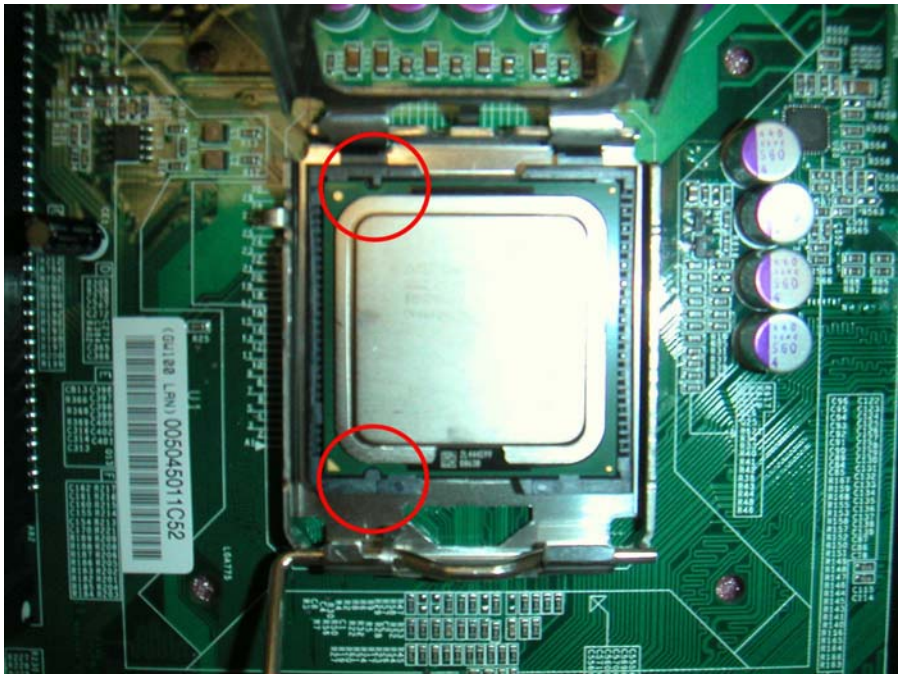


3. Now that the lever is in its unlocked position, lift up the metal cover to reveal the CPU socket.

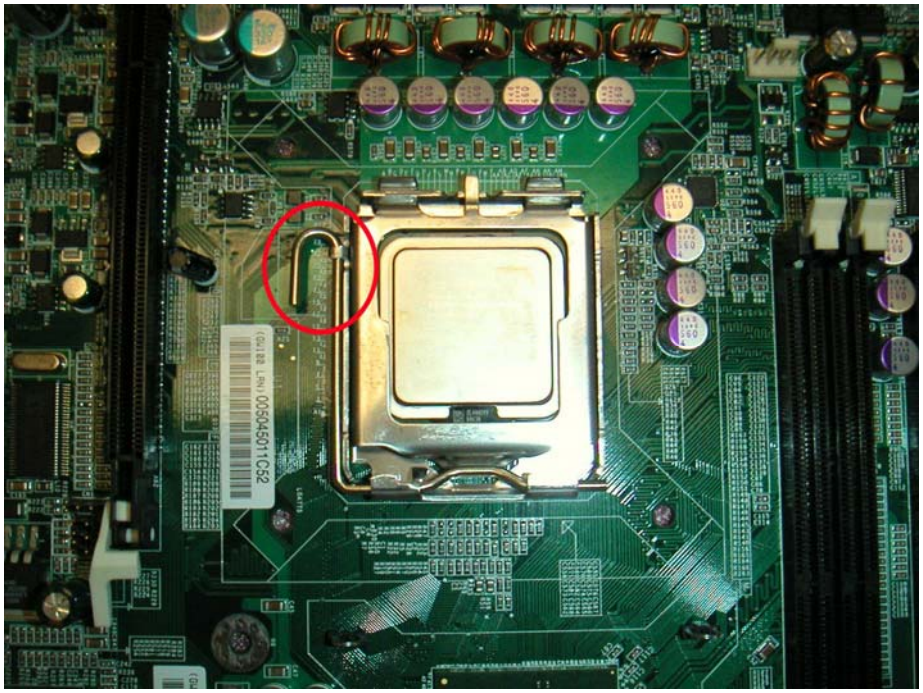


4. Place the CPU into the socket with the arrows pointing to the bottom left of the socket as shown (there are two gaps on either sides of the CPU, make sure they fit perfectly into the socket. If it is placed correctly, the CPU pins should be able to fit into the socket perfectly).

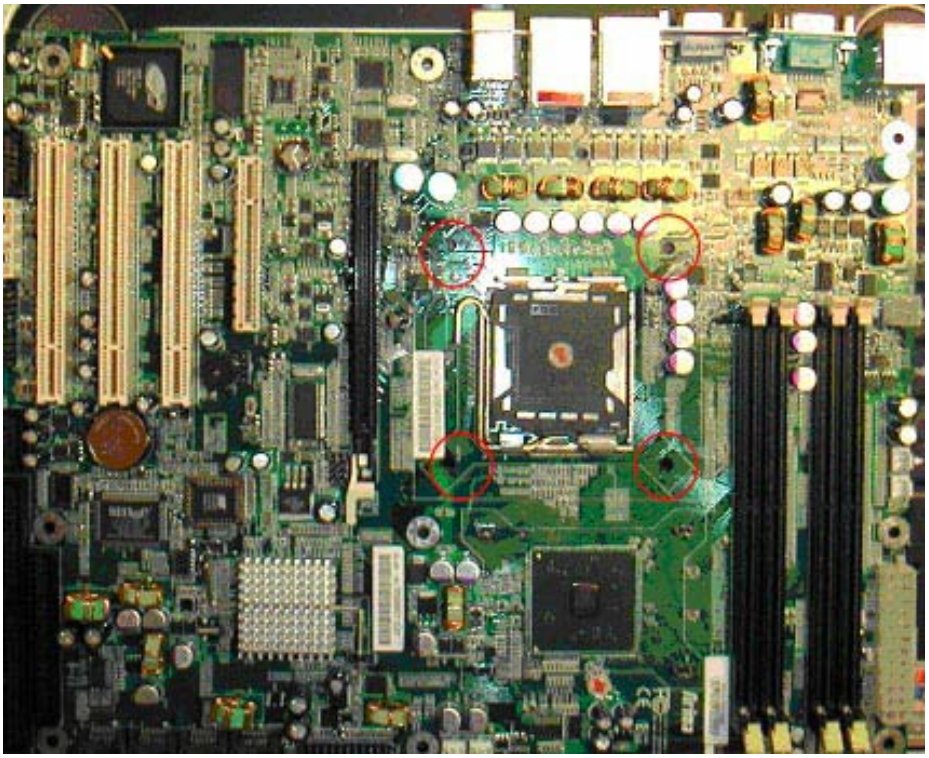
	The CPU will not fit if the orientation is wrong. Do not try to force the CPU into the socket; it could result in irreparable damage to the CPU.



5. Close the metal cover and return the lever into its original locked position.

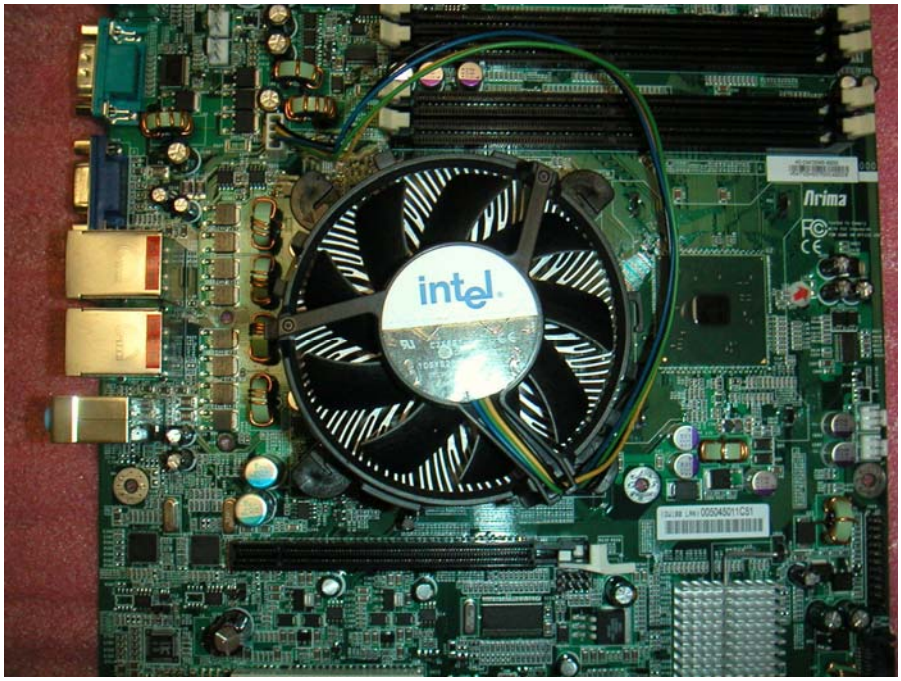


6. Now, rest the motherboard into the chassis, align the four holes of the backplate with the four bolts of the chassis.



!	We do not recommend you to apply thermal compound at this point of the installation. The heatsink provided along with your CPU already has thermal grease on the bottom for your convenience. Do not apply more thermal grease if it is already present. Too much thermal grease will spill onto the CPU circuit and damage the CPU.

6. First align the four pegs with the four mounting holes on the motherboard. After you have made sure that the pegs are in their proper positions, push down on the four plastic pegs until you hear clicking sounds, notifying you that the pegs have been securely locked into the mounting holes.



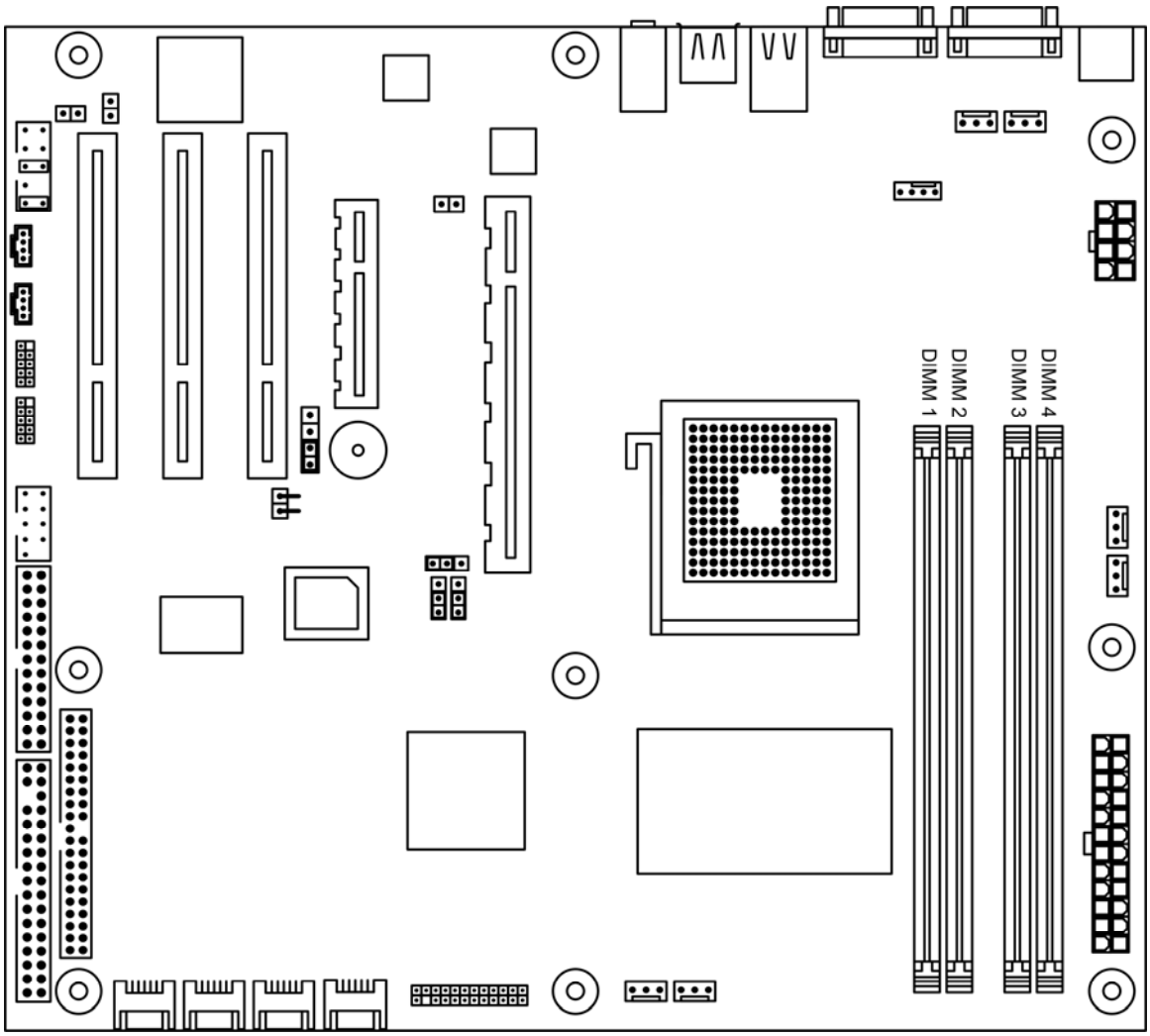
	To remove the heatsink, gently turn the pegs until they loosen themselves from the mounting holes. Gently pull up the heatsink, to prevent any damage to the CPU.

	Heatsink not included in the package.

2.5 Installing the Memory

2.5.1 DIMM Combination

The diagram below shows the 4 DIMM slots from 1 to 4.



Types of memory supported:
There are 4 DIMM sockets for 240-pin 1.8-Volt DDR2 DIMMs (WILL ONLY SUPPORT Un-Buffered ECC type memory modules ONLY). Please note the diagrams below to identify if your DIMM memories are ECC or non-ECC.

Before installing your memory sticks, please ensure that the memory sticks you have are compatible with the GW100. The GW100 will only support DDR2-533/667 modules. Please study the table below for memory module specification of the GW100.

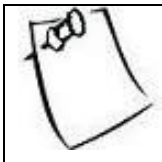
Key Notes:
- ✓ DDR2 Memory Modules Supported: 256MB – 2GB (Unbuffered ECC Only)
- ✓ Installed memory will all be automatically detected (No jumpers or settings are needed)
- ✓ GW100 supports up to 8GB in total
- ✓ Registered memory is NOT supported
- ✓ Single or double sided DIMM are both supported. For details, please study the table below

Dual-Channel Mode	Channel A		Channel B		System Density
	DIMM 1	DIMM 2	DIMM 3	DIMM 4	
One DIMM Only	●				256MB-2GB
Two DIMM Symmetrical	●		●		512MB-4GB
Two DIMM Symmetrical		●		●	512MB-4GB
Four DIMM Symmetrical	●	●	●	●	1GB-8GB

Note
1. Each bullet point represents a 256MB-2GB memory module.

2. Symmetrical DIMMs must be identical.
   - Same System Density (256MB, 512M, 2GB, etc)
   - Matched Sided DIMMs (Single sided or Double Sided)

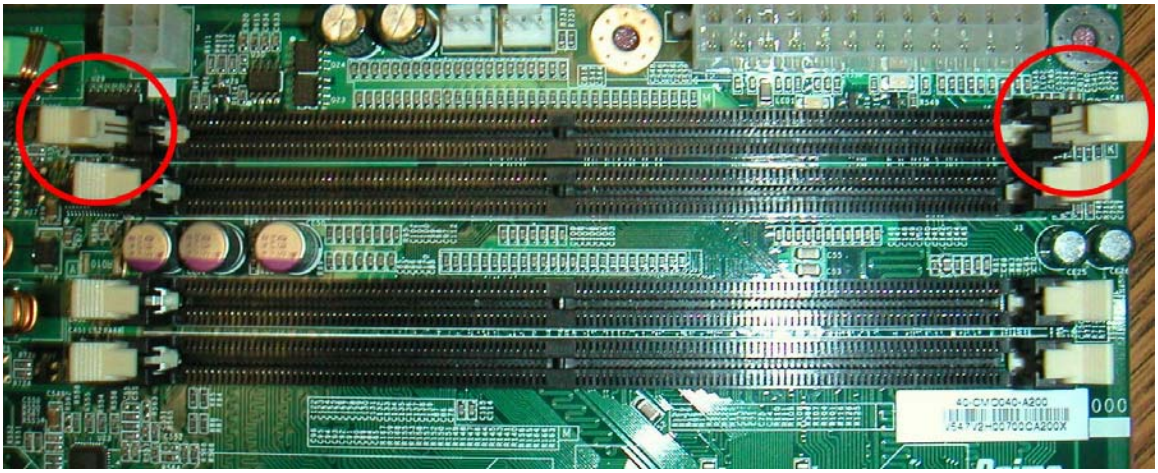
PS. We recommend you to use symmetrical DIMMs of the same brand/model.



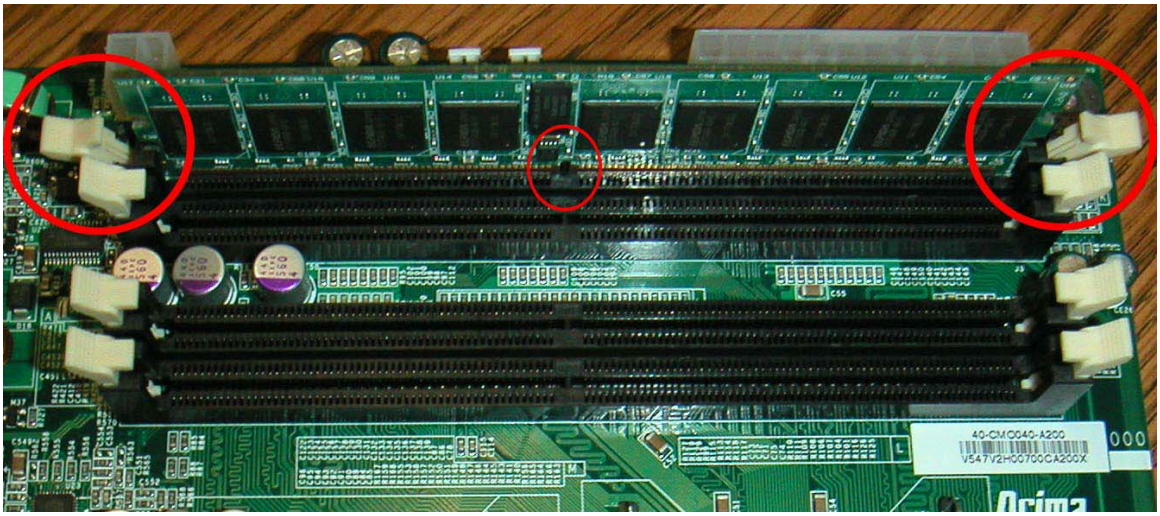
Any configuration other than the recommended is not guaranteed to work. Please refrain from using those configurations as we cannot provide technical support on them.

2.5.2 Installing DIMM modules

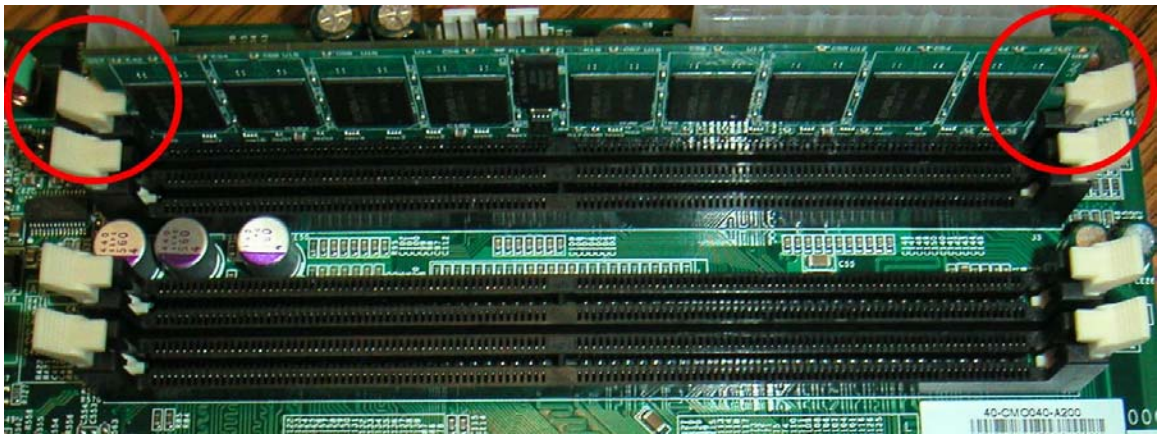
1. Open up the brackets on the sides by flicking them to the sides:



2. Line up the memory with socket. Make sure the gap fits into the socket.



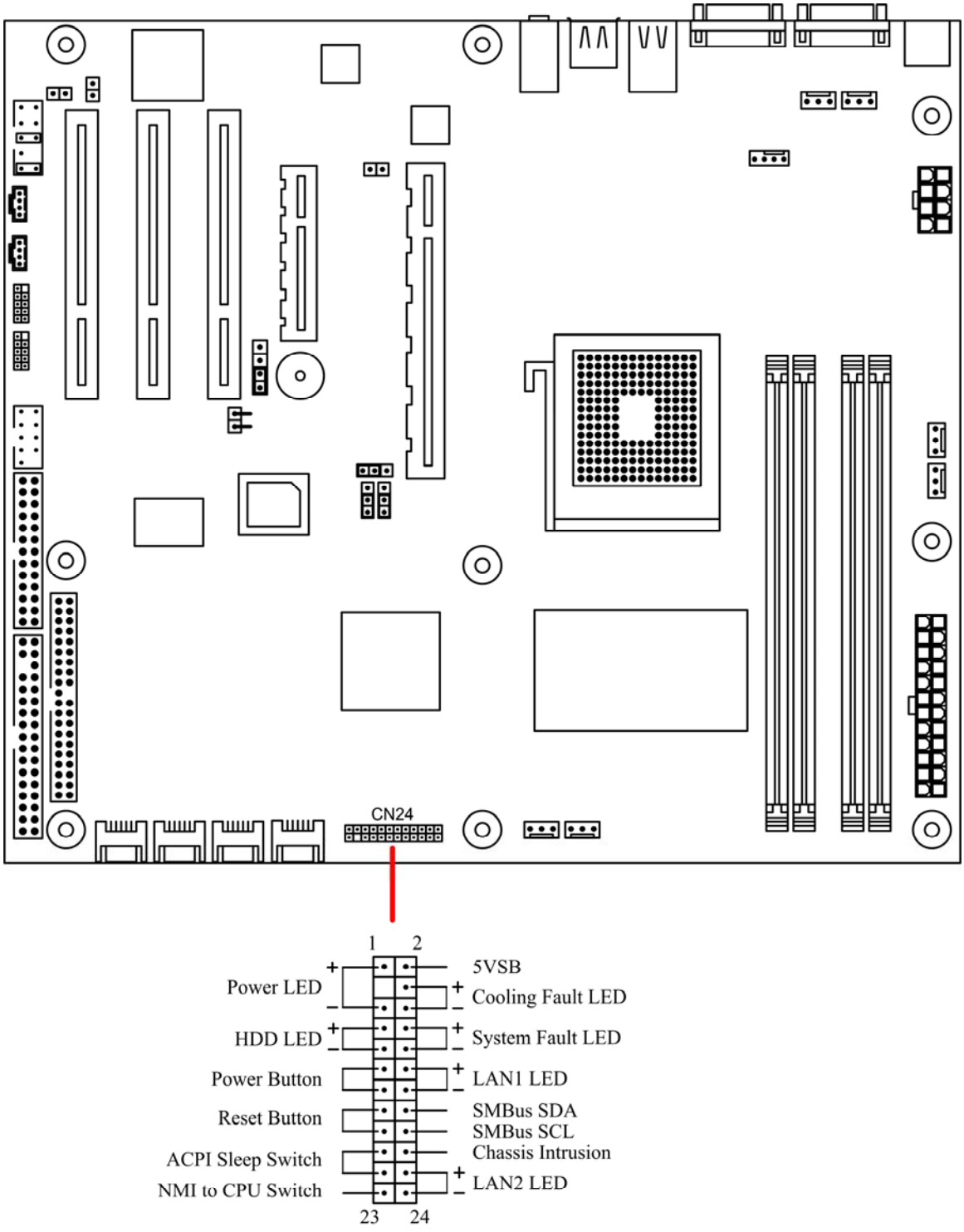
3. Push the memory stick down until the brackets on the sides snap to secure the memory module in place. Make sure the brackets are locked into the memory module.



	These pictures only show the procedures for the installation of one memory module. Please refer to section 2.3.1 to make sure the memory module combination is qualified for the motherboard.

2.6 **Jumpers Configuration**

2.6.1 Front Panel Connectors

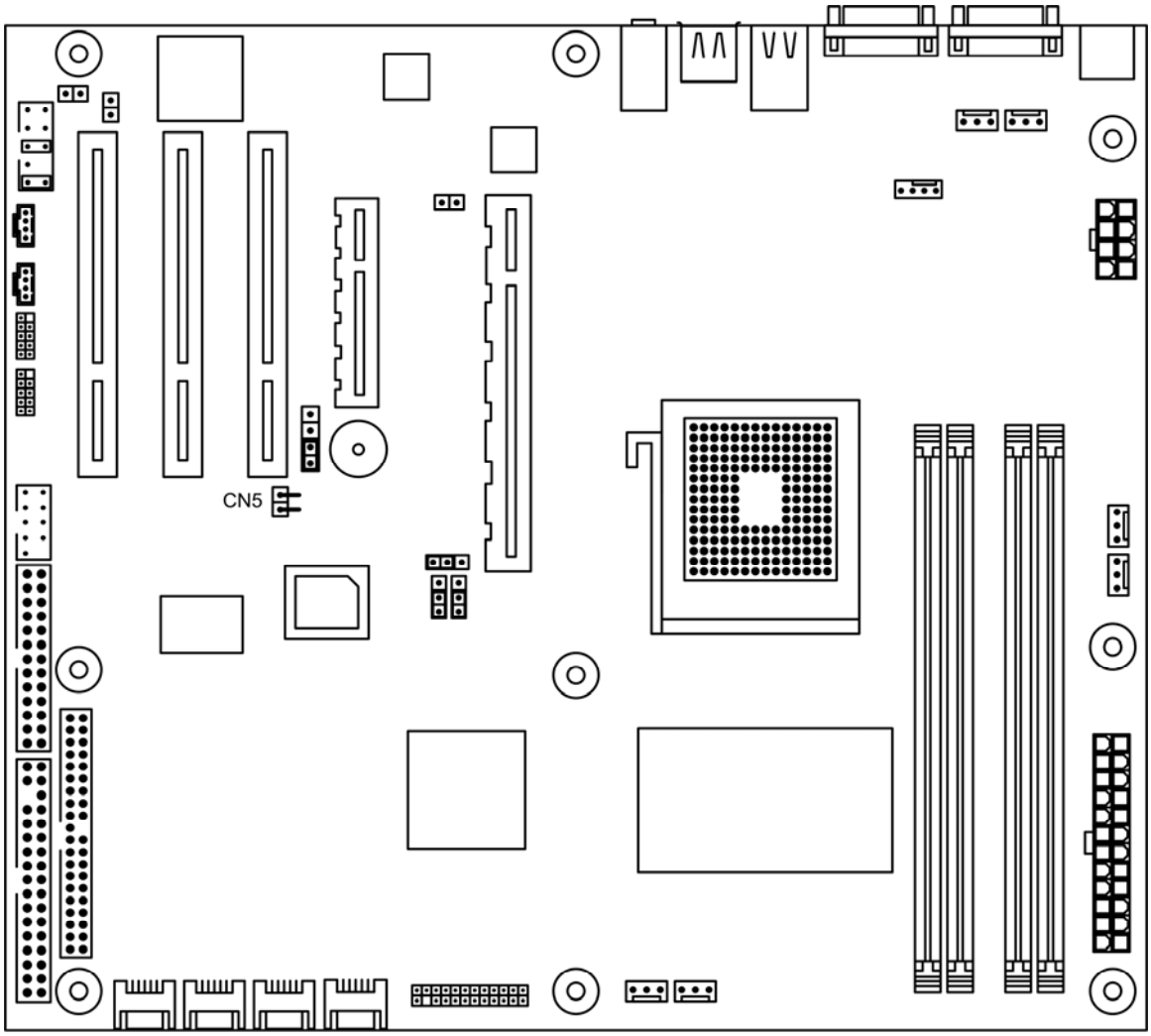


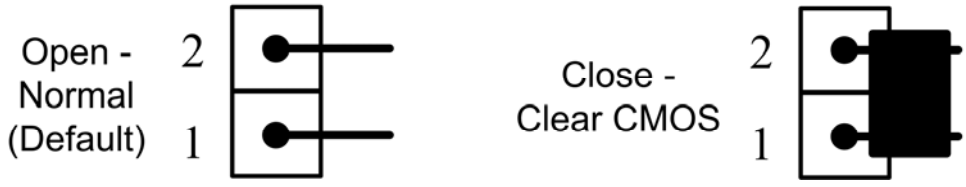
Power LED:	This 3-pin connector attaches to the power LED.
HDD Activity LED:	This 2-pin connector attaches to the LED of the hard disk. The LED lights up when HDD is active.
Power Switch:	This 2-pin connector attaches to the power button of the system.
Reset Switch:	This 2-pin connector attaches to the case-mounted reset switch for rebooting your computer without turning on/off your power switch.
ACPI Sleep Switch:	This 2-pin connector connects to the switch that can take the system into standby mode when pressed.
NMI to CPU Switch:	This 1-pin connector connects to the switch that send Non-Maskable Interrupt to the CPU. User can customize the button to perform a particular function.
5 VSB:	This connector provides the user with power to any extra devices that uses 5 volt power.
Cooling Fault LED:	This connector connects to the LED that lights up when a problem arises with cooling system.
System Fault LED:	This connector connects to the LED that lights up when a problem arises with the system.
NIC#1 Activity LED:	This connector connects to the LED that lights up when there is activity on Gbe 1.
SMBus SDA:	A private bus to BMC chip for serial data, for use with BMC only.
SMBus SCL:	A private bus to BMC chip for serial clock, for use with BMC only.
Chassis Intrusion:	This connects to the mechanical switch that indicates whether the chassis had been opened. User can activate it if desired.
NIC#2 Activity LED:	This connector connects to the LED that lights up when there is activity on Gbe 2.

2.6.2 Clear CMOS header

Header CN5 controls CMOS setting. Position your motherboard as it appears in the following diagram. To clear CMOS:

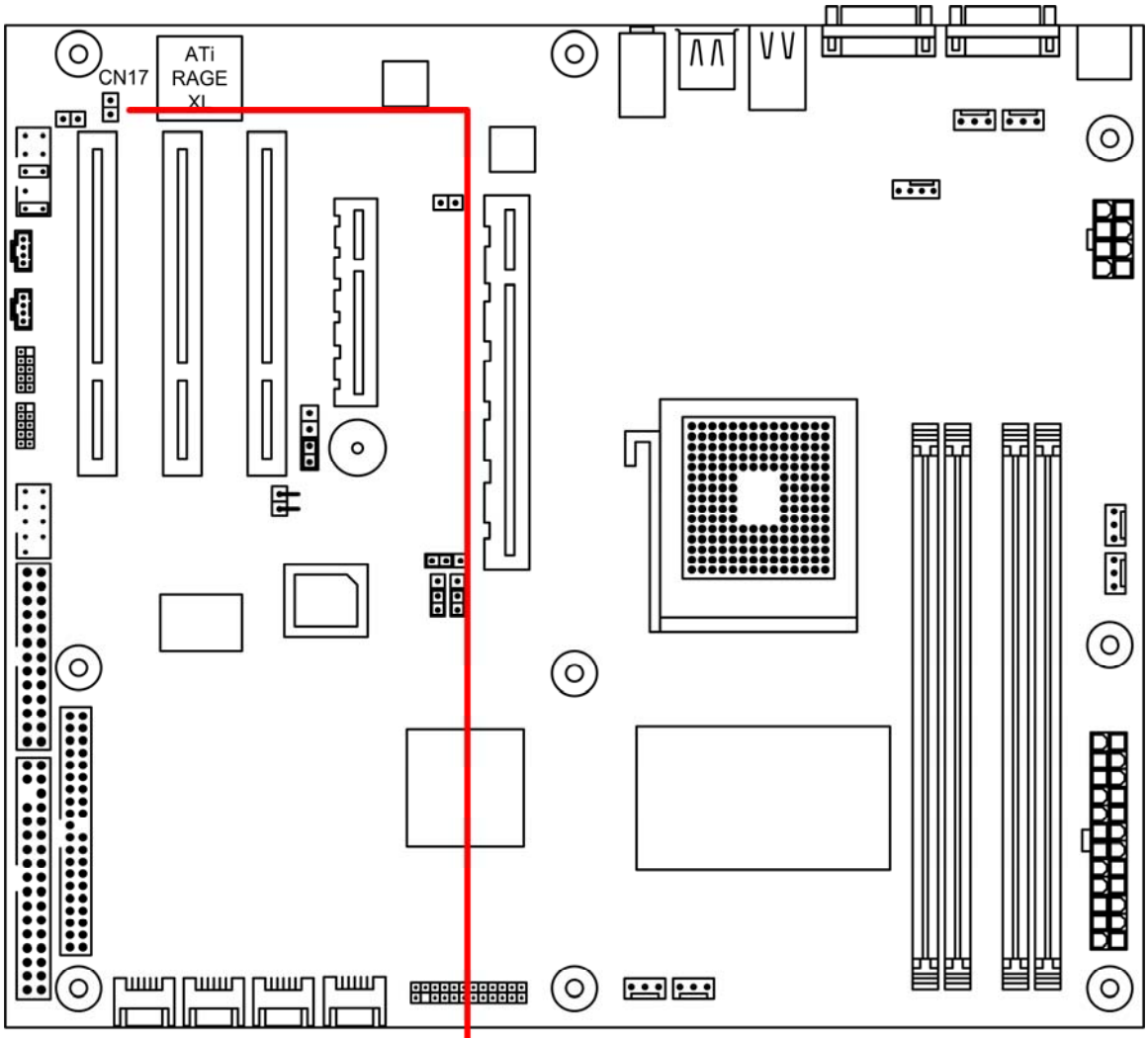
1. Turn off the system, make sure standby power on the power supply has been turned off too.
2. Short pin 1 and pin 2 using a jumper for a few seconds.
3. Take out the jumper.
4. Turn on the system and reconfigure the BIOS.

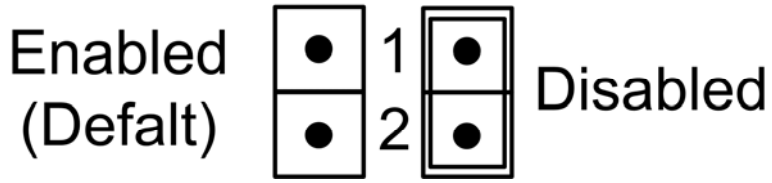




2.6.3 Enable onboard VGA header

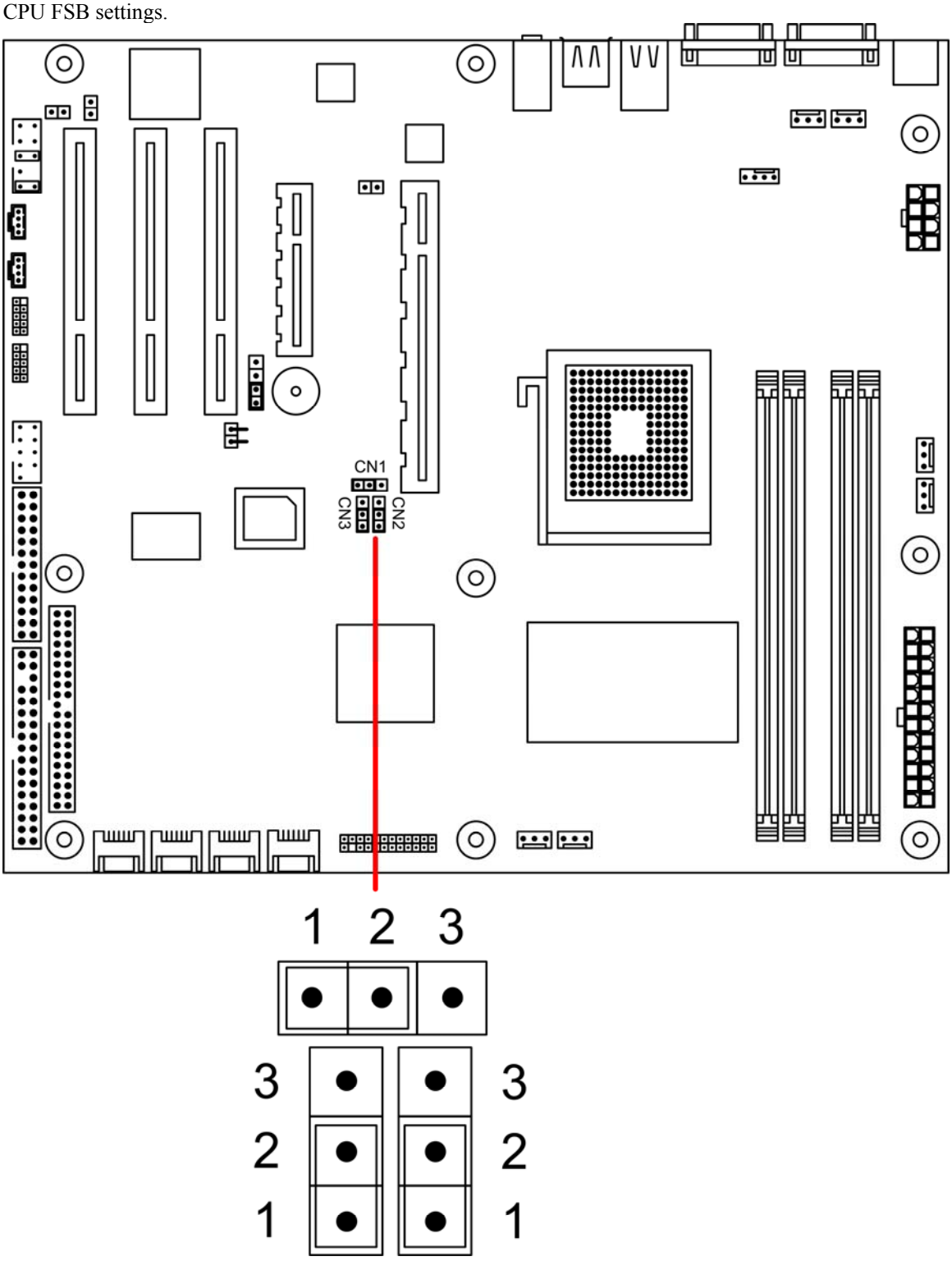
Header CN17 controls the onboard VGA setting.
When CN17 is open, no jumper, VGA is enabled. When CN17 is closed, VGA is disabled. Refer to the following diagram for CN17 location:





2.6.4 CPU FSB Setting

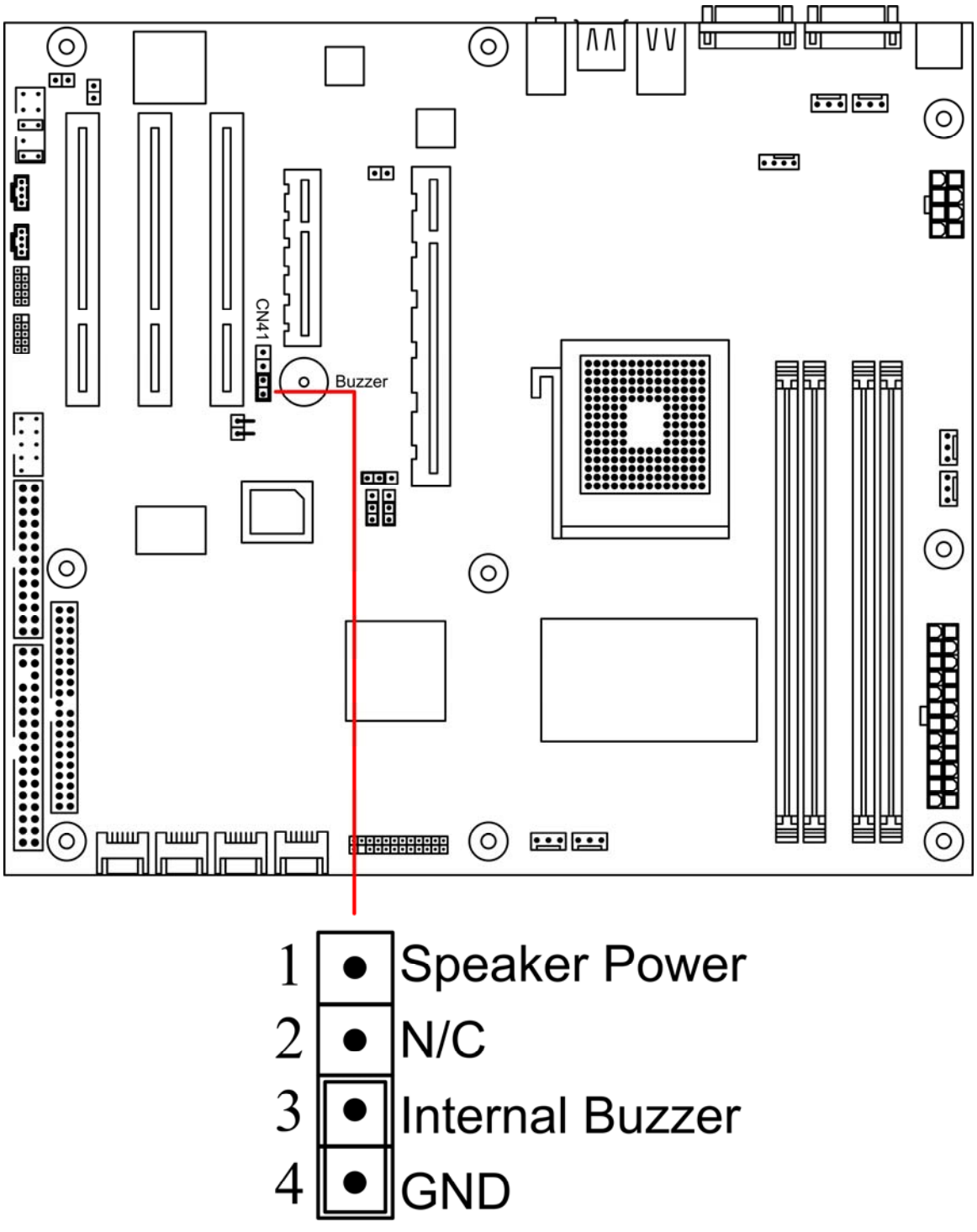
Headers CN1, CN2, and CN3 control the CPU FSB setting. Please refer to the table below for the available CPU FSB settings.



CN1	CN2	CN3	FSB Clock/Speed
1-2	1-2	1-2	Auto (Set by CPU)
2-3	2-3	Open	Force 133 MHz / 533
2-3	Open	2-3	Force 200 MHz / 800
2-3	2-3	2-3	Force 266 MHz / 1066

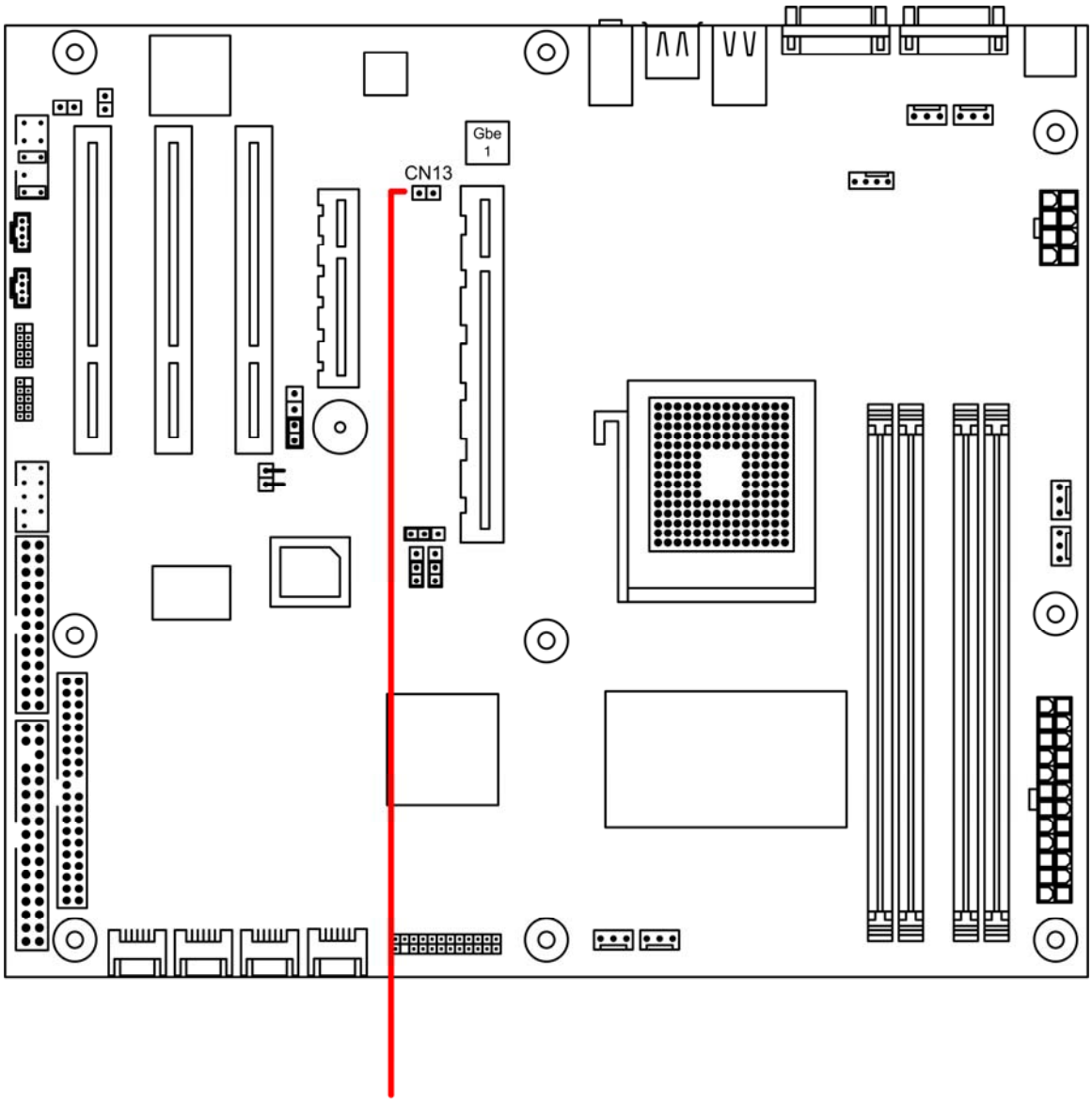
2.6.5 Onboard Buzzer

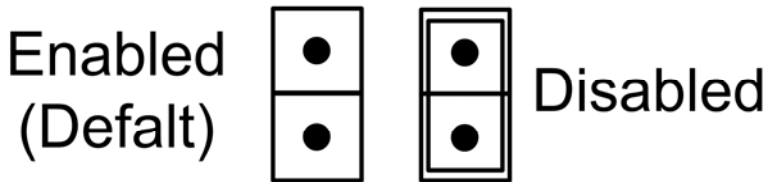
The header CN41 setting controls the on and off state of the onboard buzzer. Jumper 3-4 enables the buzzer, and open sets it off.



2.6.6 Gigabit Ethernet Lan Chips

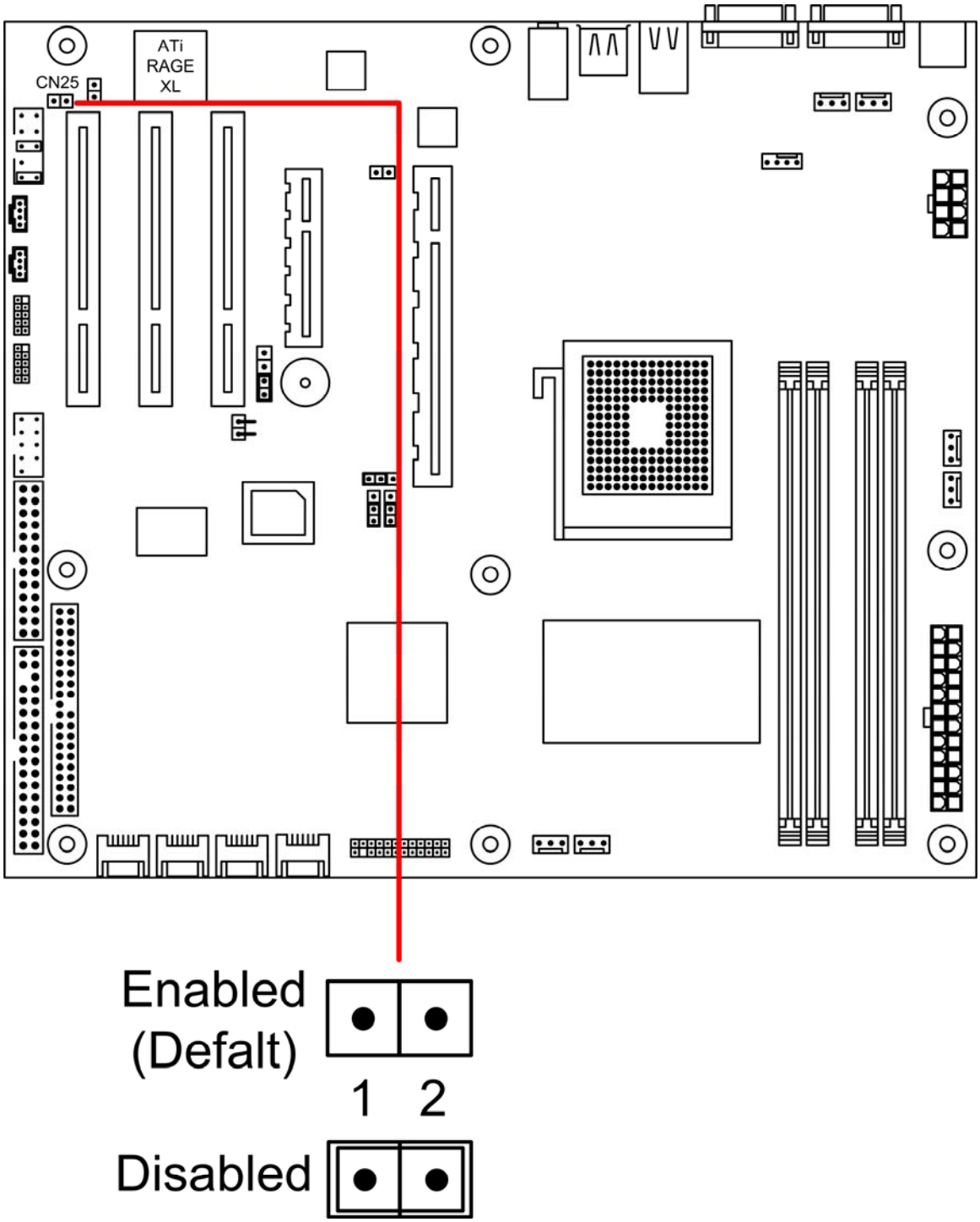
Header CN13 controls the two Gigabit Ethernet chips. Each can be enabled or disabled by setting the jumper by the given configuration below. Refer to the diagram below for the locations of the headers.





2.6.7 Onboard Sound

Header CN25 enables (open) or disables (closed) the onboard sound chip.



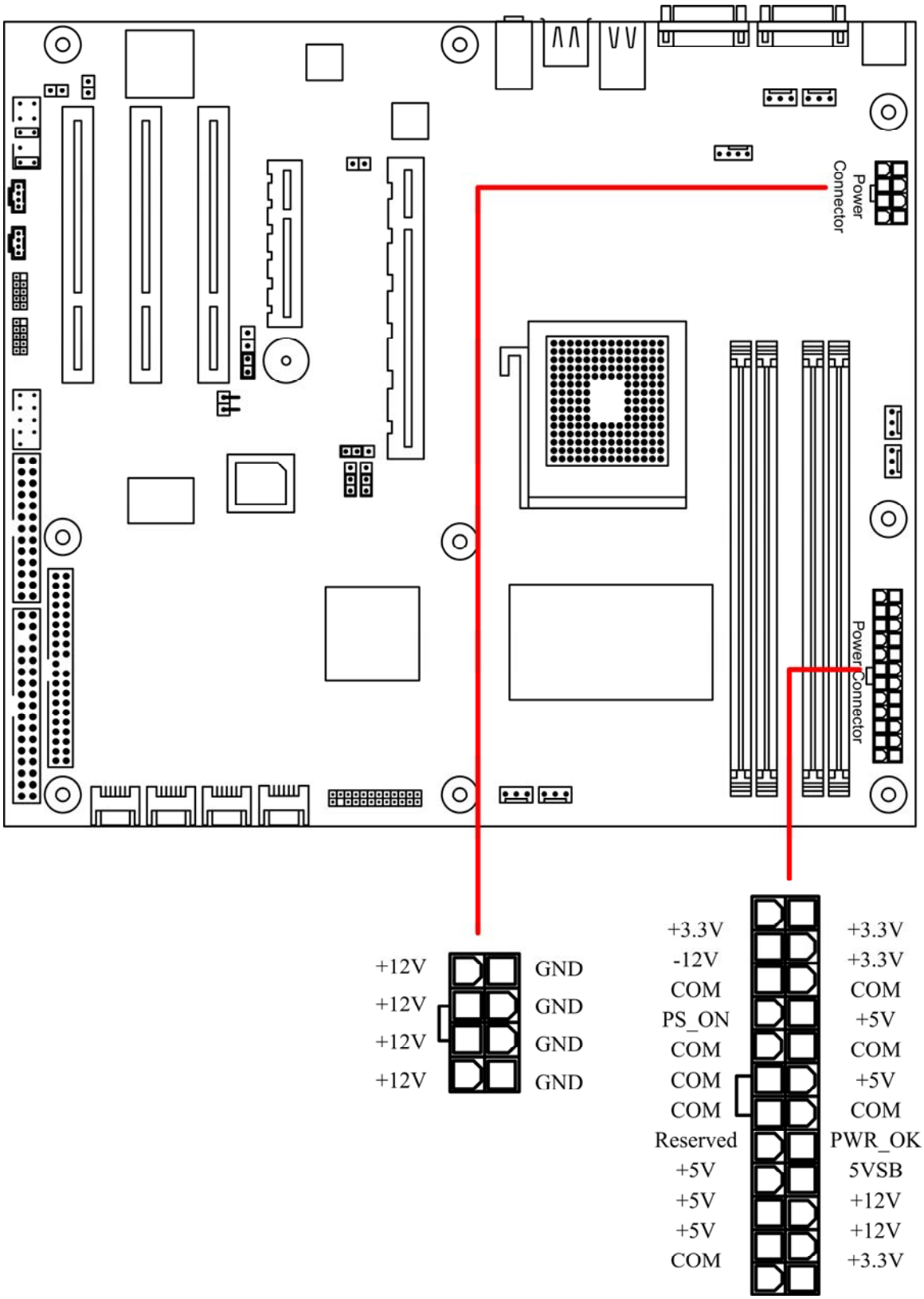
2.7 Power Supply

2.7.1 ATX 24-pin power connector and CPU 4-pin connector

There is one 24-pin power input connection and a 4-pin power input connection on the motherboard. The 24-pin power connection is used to connect to the power supply, while the 4-pin power connection is used to power up the CPU. BOTH must be connected in order for the system to boot up. Make sure the plugs are inserted into the connectors properly, to prevent any damage.

Please make sure your power supply can support at least 2 amps standby power for the Advanced Configuration and Power Interface (ACPI) functions.

Refer to the following diagram below for the connector locations.

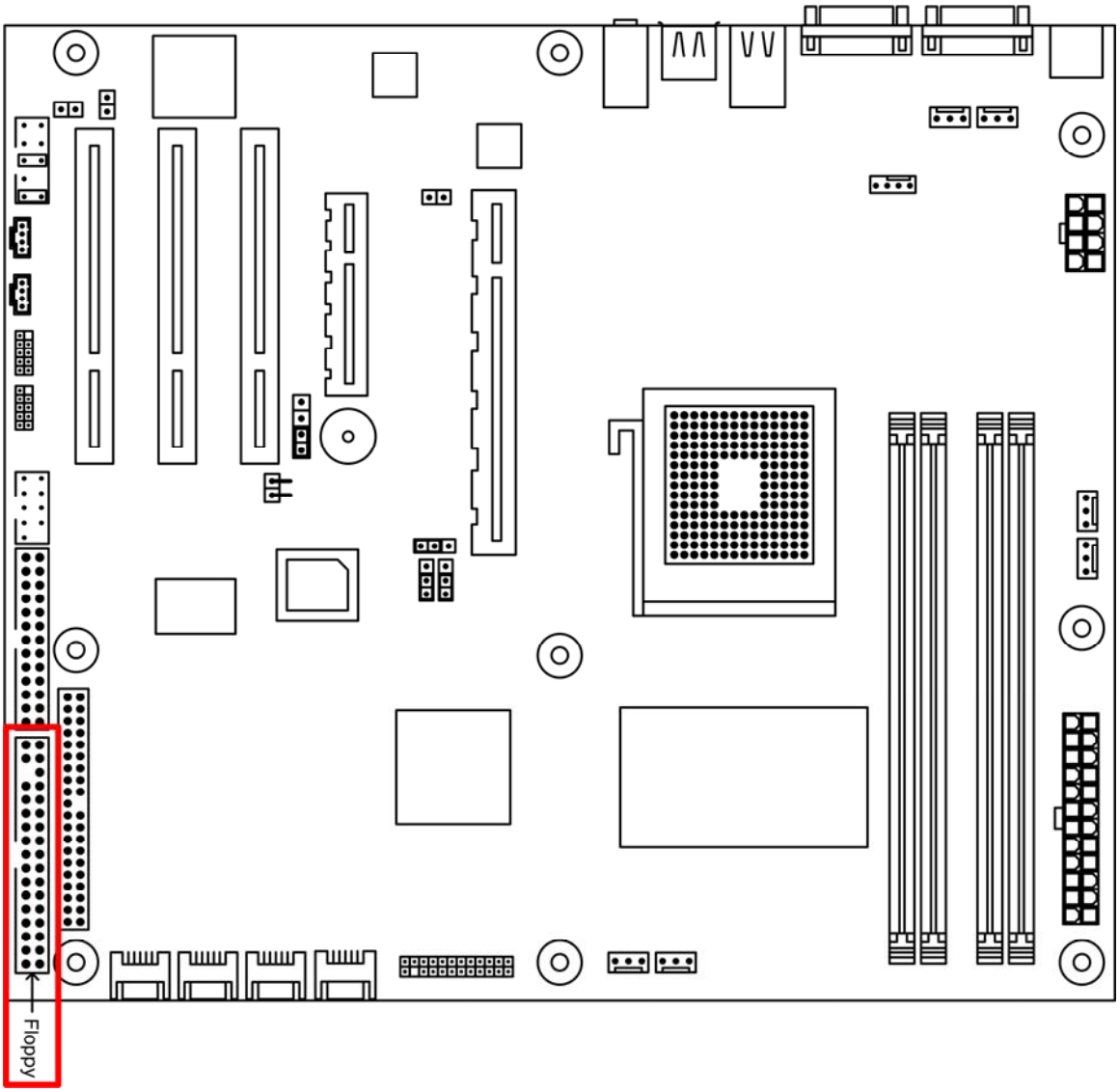

Power Connector
Power Connector
+12V
+12V
+12V
+12V
GND
GND
GND
GND
+3.3V
-12V
COM
PS_ON
COM
COM
COM
Reserved
+5V
+5V
+5V
COM
+3.3V
+3.3V
COM
+5V
COM
+5V
COM
PWR_OK
5VSB
+12V
+12V
+3.3V

	Make sure the AC adapter is not plugged into the wall outlet during installation. The electric current could damage the motherboard.

2.8 Cables & Connectors

2.8.1 Floppy disk drive connector

The following diagram indicates the location of the floppy drive connector:



To install the floppy drive, first refer to the instructions that come with the floppy drive. Then follow the instructions here.

Attaching a floppy drive can be done in a similar manner to an IDE drive. Most of the current floppy drives on the market require that the cable be installed with the colored stripe positioned next to the power connector. In most cases, there will be a key pin on the cable, which will force proper connection of the cable.

The motherboard supports only one floppy connector, but the connector can support up to two floppy drives. Below are some symptoms of incorrectly installed floppy drives. Wrong installation should not

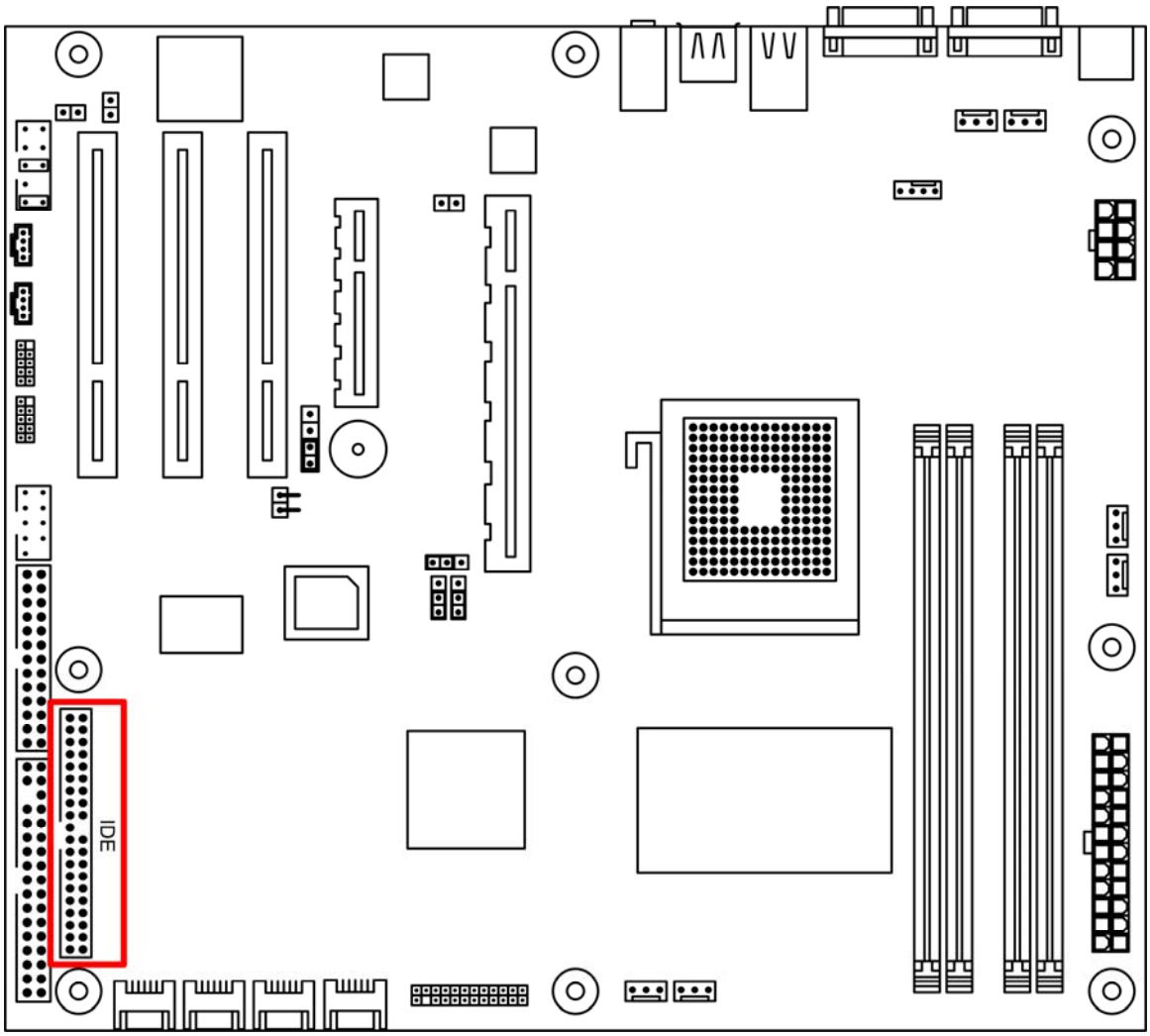
cause severe damage but it may cause your system to freeze or crash when trying to read and/or write to the floppy diskette.

Diagnosing an incorrectly installed floppy drive

Drive is not automatically detected.	Usually caused by faulty cables, cables put in backwards or a bad floppy drive or motherboard. Try another floppy drive to verify the problem if the cable is properly installed or try replacing the actual cable. Also check to see if the onboard floppy controller is enabled in the BIOS setup.
Drive Fail message at boot-up.	The cable, floppy drive or motherboard may be faulty. Try another drive or cable to verify.
Drive does not power on.	Check power cable and cabling. Maybe a bad power supply or drive cable problem.
Drive activity light is constantly on.	Usually signifies that the cable on the drive is on backwards, which is a common issue. Reverse the cable on the floppy drive end and try again.

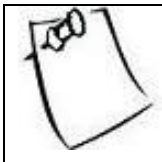
2.8.2 IDE connectors

The following diagram indicates the location of the IDE connector:



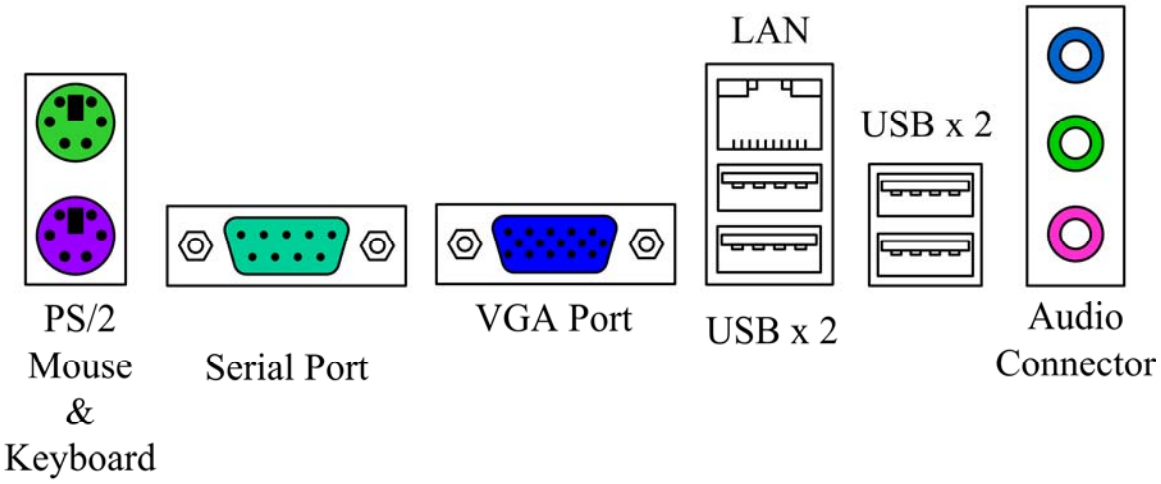
Read the instructions that come with the IDE drive and then consult the instructions here.

For Parallel ATA, installing IDE drives has become simpler over the years. The cables are now "keyed" to guide the user to the correct installation configuration. Each IDE connector can support two IDE drives. For the first IDE drive you want to use the Pri_IDE connector (setting the drive to Master). For the second IDE drive you can either use the connector (in which case, the second IDE drive should be set to Slave) or you use the Sec_IDE connector (in this case, set the second IDE drive to Master).

	Remember to set BIOS to match the configuration that you implement here. Go to Advanced Menu section of BIOS for detail.

2.8.3 Rear Panel I/O ports

The following illustration displays the motherboard I/O port array.

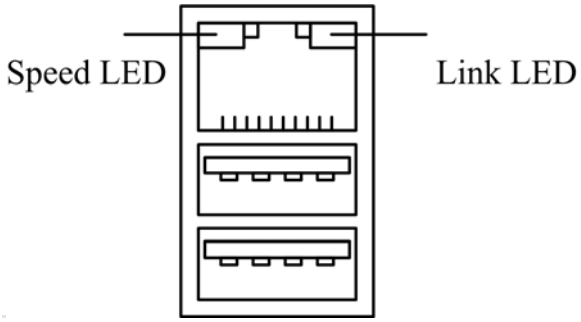


Type of Port	Function
PS/2 Mouse connector	The system will direct IRQ12 to the PS/2 mouse if one is detected. If not detected, IRQ12 can be used for expansion slot.
PS/2 Keyboard connector	This connection is for a standard keyboard using a PS/2 plug (mini DIN). This connector will not allow standard AT size (large DIN) keyboard plugs. You may use a DIN to mini DIN adapter on standard AT keyboards.
USB Ports	Four external USB 2.0 ports that allow simultaneous connections of 2 USB devices.
Serial Port connector (9-pin male)	This serial port can be used for pointing devices or other serial devices. See BIOS setup.
VGA connector (15-pin female)	The VGA port connects display devices such as a monitor. See the BIOS setup.
Gigabit Ethernet Port	These ports are RJ-45. The motherboard uses the Intel Marvell dual channel Gigabit Ethernet.
Audio Connector	This connector provides Line-In/Rear speakers, Front speakers, and Microphone/Center speaker and Subwoofer audio jacks.

2.8.4 Back Panel LAN LED

Back Panel LAN LED:
The table below will allow the user to monitor LAN activities from the back of the system.

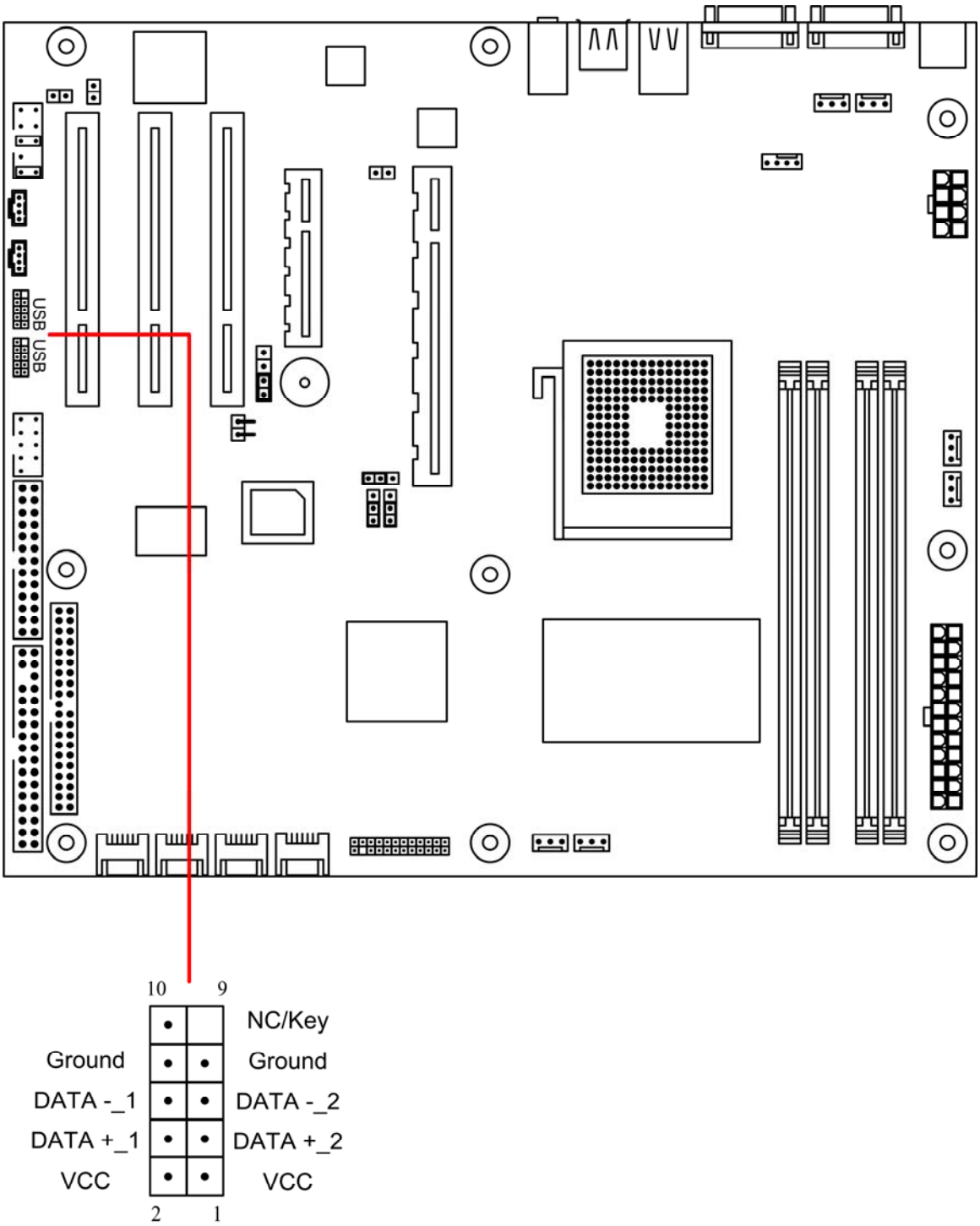
State of Link	Link LED (Yellow)	Speed LED (Green/Orange)
No link	OFF	OFF
Link @ 10Mbps	ON	OFF
Link @ 100Mbps	ON	Green
Link @ 1000Mbps	ON	Orange
Activity	BLINK	



2.8.5 Front USB Connector

Header CN6 and CN7 control the two front USB connections.
To activate the front USBs, connect the USB wires to CN6 or CN7.

Refer to the following diagram for the location of CN6 and CN7.

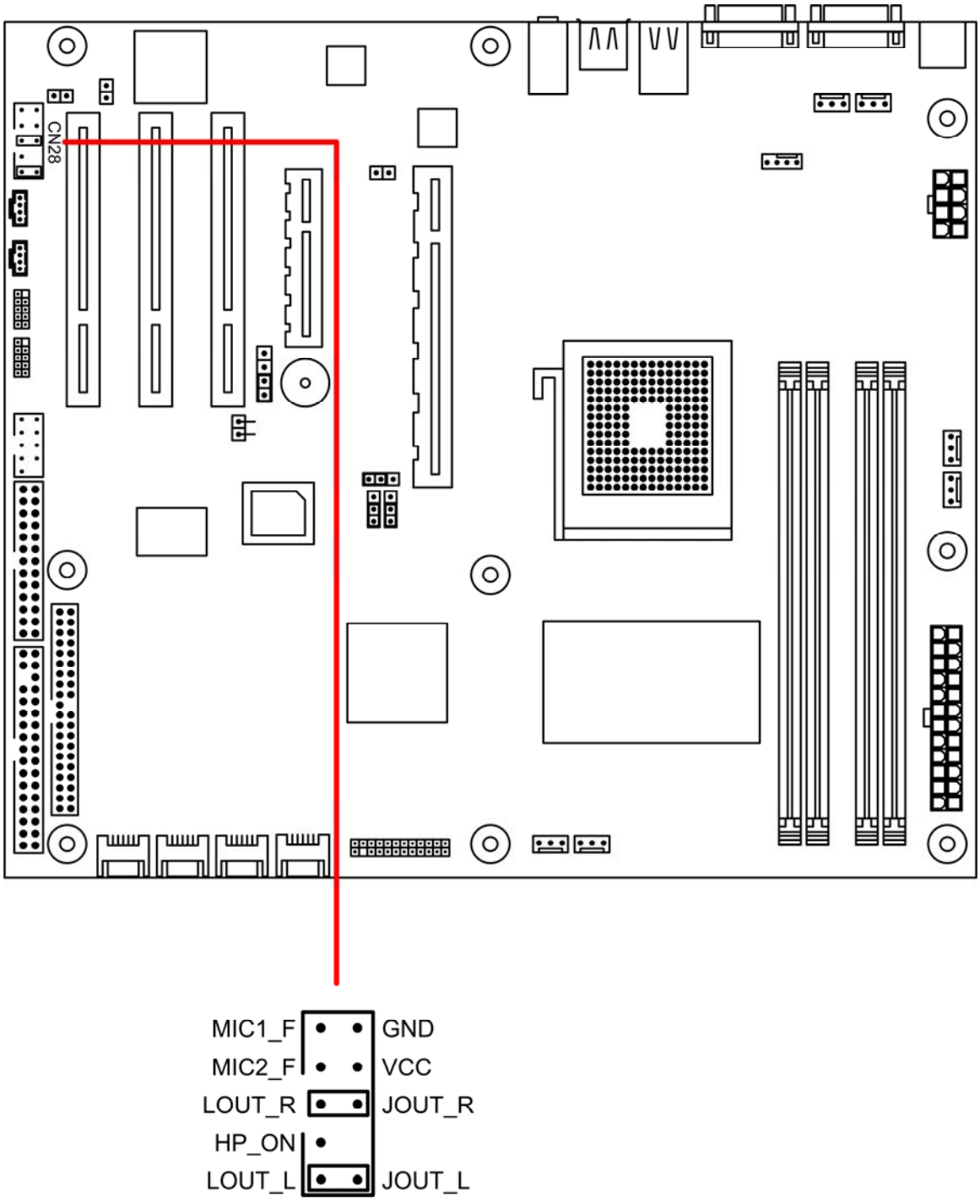


Side A shares the same bus as USB A, therefore two USB devices cannot use side A and USB A together. Only one device will work at a time. The same goes for Side B and USB B.

2.8.6 Front Audio Connector

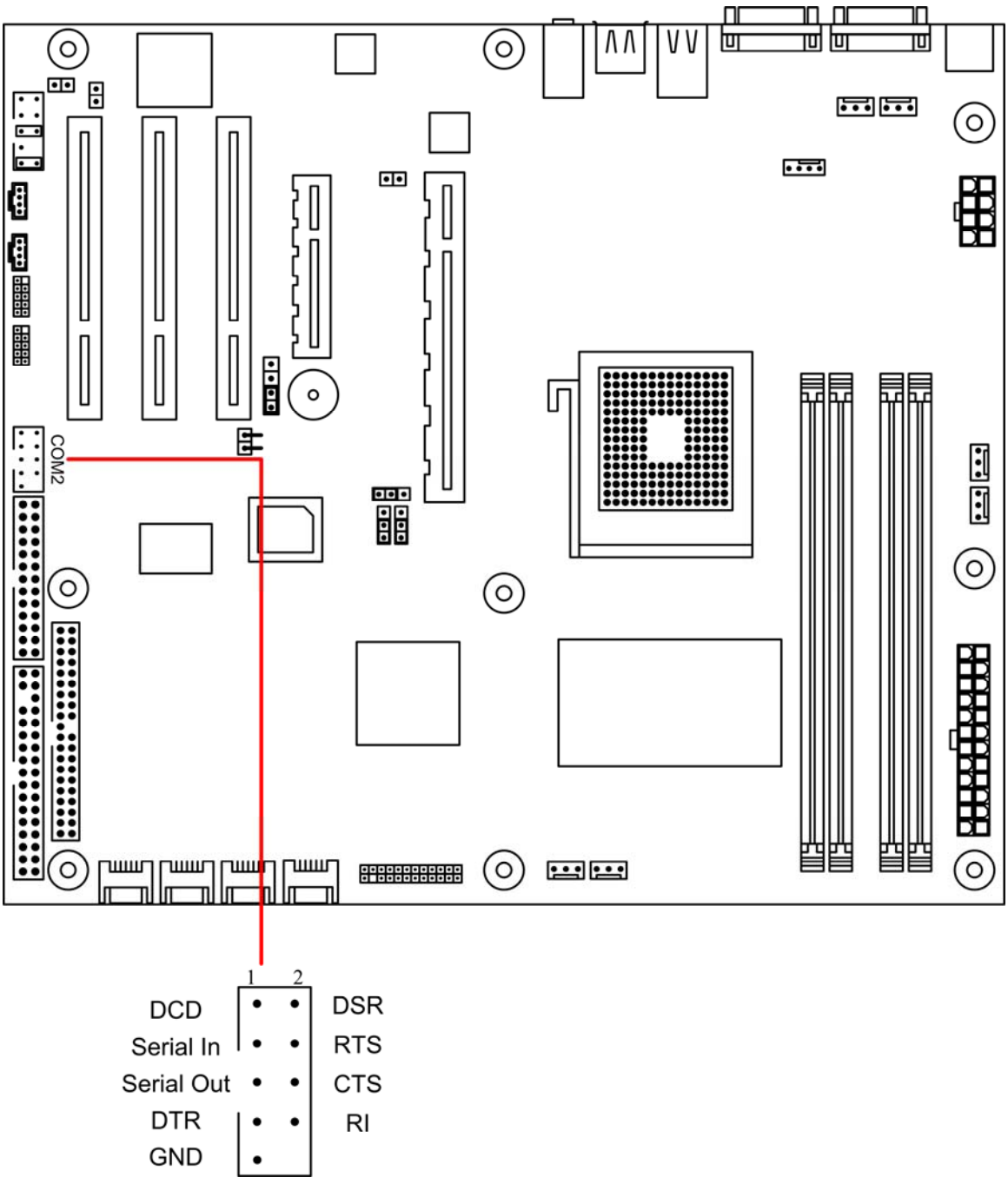
Header CN28 is for Front Audio connection.

Refer to the following diagram for the location of CN28.



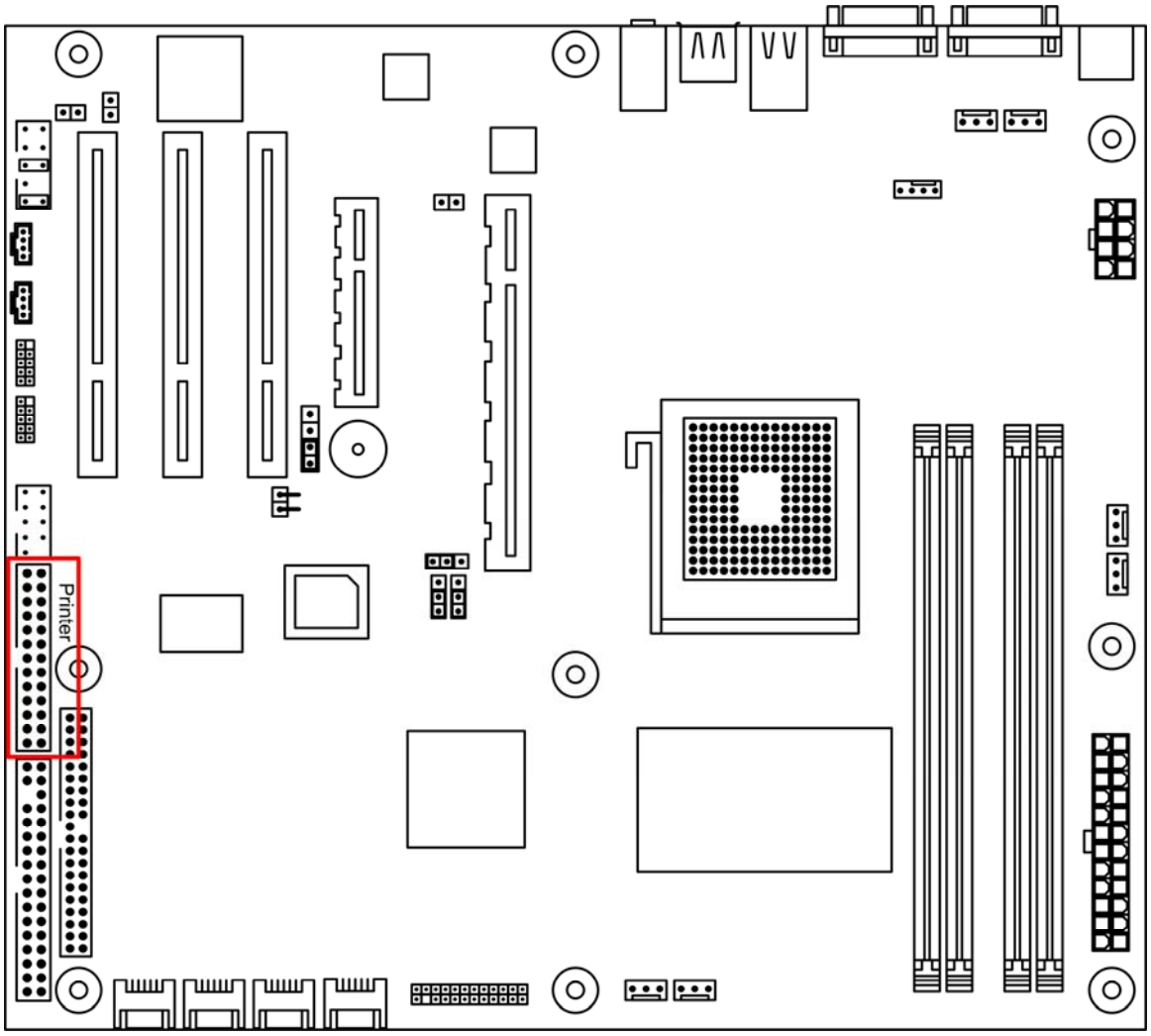
2.8.7 Front Panel Serial Port Connector

Header CN20 controls the activation of front panel serial port.
In the specification, front panel serial port is COM2, the back panel is COM1.
Refer to the following diagram for location and orientation of CN20.



2.8.8 Printer Connector

CN42 is the printer connector. Pleae refer to the diagram below to locate the connector.



CHAPTER 3. BIOS SETUP

This chapter discusses the PhoenixBIOS setup program built into the ROM BIOS.
BIOS is the basic input/output system, the firmware on the motherboard that enables the hardware to interact with the software. The setup program allows the users to modify the basic system configurations according to their needs. The configuration is then stored in a battery-backed NVRAM so that it retains the configuration even when the power is turned off. The PhoenixBIOS installed in the motherboard's ROM is a custom version of an industry standard BIOS.
The rest of the chapter will list all the menus and sub-menus in the BIOS. Along with them, you can also find the list of varieties for any configurable item in the BIOS.

3.1 ENTERING BIOS SETUP

The PhoenixBIOS is activated when the system powers on. The BIOS reads the system information contained in the CMOS and begins the process of checking the system and configuring it. After finishing configuring the whole system, BIOS will seek an OS on disk and turn over control of the system to the OS found.
While BIOS is in control, the Setup menu can be accessed by pressing the <F2> key when the following message appears briefly at the bottom of the screen during Power On Self Test: "Press <F2> to enter SETUP."

3.2 Using Setup

The following table provides details about how to navigate the Setup program using keyboard.

KEY	FUNCTION
Up Arrow ↑	Move to the previous item.
Down Arrow ↓	Move to the next item.
Left Arrow ←	Move to the previous menu.
Right Arrow →	Move to the next menu.
Esc	In the submenu: Exit the submenu. In the main menu: Exit without saving.
Enter	Select the item. A pop-up window will appear to allow setting of the item's value. If the item has a 4in front of it, it means that the item leads to a sub-menu. Pressing <Enter> will take you to the sub-menu.
+ or F6	Increase the numeric value or goes to the previous setting value.
- or F5	Decrease the numeric value or goes to the next setting value.
F1	General help on setup navigation keys. Press <F1> key to pop up a small help window that describe the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <ESC> key or <F1> key again.
F9	Setup Defaults.
F10	Save and Exit.

3.3 Troubleshooting

In case the system cannot be booted after some changes in BIOS, use the clear CMOS jumper setting to reset the BIOS to default (See Page 27). To avoid such problem, configure only the items that you thoroughly understand and refrain from modifying the advanced settings.

3.4 Main Menu:

When Serial ATA is disabled:

PhoenixBIOS cME FirstBIOS Pro Setup Utility **Main** Advanced Security Power Boot Exit	
	Item Specific Help
System Time [12:59:59] System Date [11/30/2002] Legacy Diskette A: [1.44/1.25 MB 3½] ►IDE Primary/Master [200GB] ►IDE Primary/Slave [CD-ROM] ►Memory Cache ►Boot Features Installed memory: 2024 MB . Available to OS: 2024 MB . Used by devices: 2 MB	<Tab>, <Shift-Tab>, or <Enter> selects field.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

When Serial ATA is enabled:

PhoenixBIOS cME FirstBIOS Pro Setup Utility **Main** Advanced Security Power Boot Exit	
	Item Specific Help
System Time [12:59:59] System Date [11/30/2002] Legacy Diskette A: [1.44/1.25 MB 3½] ►IDE Primary/Master [200GB] ►IDE Primary/Slave [CD-ROM] ►SATA Port 1 [80026MB SATA1] ►SATA Port 2 [80026MB SATA2] ►SATA Port 3 [None] ►SATA Port 4 [None] ►Memory Cache ►Boot Features Installed memory: 2024 MB . Available to OS: 2024 MB . Used by devices: 2 MB	<Tab>, <Shift-Tab>, or <Enter> selects field.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

The following table shows the items that you can customize on the Main menu page:

Item	Options	Description
System Time	No options.	Shows the time of the day in the format of Hour/Min/Sec.
System Date	No options.	Shows the date in the format of MM/DD/YYYY.
Legacy Diskette A	Disabled 360 Kb 1.2 MB 720 Kb 1.44/1.25 MB 2.88 MB	Selects floppy type. Note that 1.25 MB 3½" references a 1024 byte/sector Japanese media format. The 1.25 MB, 3½" diskette requires a 3-Mode floppy-disk drive.
System Memory	No options.	This item is not configurable to user.
Extended Memory	No options.	This item is not configurable to user.

3.4.1 IDE Channel Sub-Menu:

When there is a drive installed on an IDE or SATA, the sub menu will look like the following:

PhoenixBIOS cME FirstBIOS Pro Setup Utility **Main**	
IDE PrimaryMaster [200GB]	Item Specific Help
Type: [Auto] LBA Format Total Sectors: 390721968 Maximum Capacity: 200GB Multi-Sector Transfers: [16 Sectors] LBA Mode Control: [Enabled] 32 Bit I/O: [Disabled] Transfer Mode: [FPIO 4 / DMA 2] Ultra DMA Mode: [Disabled]	User = you enter parameters of hard disk drive installed at this connection. Auto = autotypes hard disk drive install here. 1-39 = you select pre-determined type of hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

The following table shows the items that you can customize on the IDE/SATA sub-menu page:

Item	Options	Description
Type	Auto None ATAPI Removable CD-ROM IDE Removable Other ATAPI User	User = you enter parameters of hard disk drive installed at this connection. Auto = autotypes hard disk drive installed here. 1-39 = you select pre-determined type of hard-disk drive installed here. CD-ROM = a CD-ROM drive is installed here. ATAPI Removable = removable disk drive is installed here.
Multi-Sector Transfers	Disabled 2 sectors 4 sectors 8 sectors 16 sectors	Specify the number of sectors per block for multiple sector transfers. 'Max' refers to the size the disk returns when queried.
LBA Mode Control	Disabled Enabled	Enabling LBA causes Logical Block Addressing to be used in place of Cylinders, Heads & Sectors.
32 Bit I/O	Disabled Enabled	This setting enables or disables 32 bit IDE data transfers.

Transfer Mode	Standard Fast PIO 1 Fast PIO 2 Fast PIO 3 Fast PIO 4 FPIO 3/ DMA 1 FPIO 4/ DMA 2	Select the method for moving data to/from the drive. Autotype the drive to select the optimum transfer mode.
Ultra DMA Mode	Disabled Mode 0 Mode 1 Mode 2 Mode 3 Mode 4 Mode 5	Selects the Ultra DMA mode used for moving data to/from the drive. Autotype the drive to select the optimum transfer mode.

All the IDE Channel sub-menus and SATA sub-menus have the same sub-menu layout as the one shown above..

3.4.2 Memory Cache Sub-Menu

PhoenixBIOS cME FirstBIOS Pro Setup Utility **Main**				
Boot Features				Item Specific Help
Cache System Bios area:	[Write Protect]			Enabled Verifies floppy type on boot; disabled speeds boot.
Cache Video BIOS area:	[Disabled]			
Cache Base 0-512k:	[Write Back]			
Cache Base 512k-640k:	[Write Back]			
Cache Extended Memory Area:	[Write Back]			
Cache A000-AFFF:	[Disabled]			
Cache B000-BFFF:	[Disabled]			
Cache C800-CBFF:	[Disabled]			
Cache CC00-CFFF:	[Disabled]			
Cache D000-D3FF:	[Disabled]			
Cache D400-D7FF:	[Disabled]			
Cache D800-DBFF:	[Disabled]			
Cache DC00-DFFF:	[Disabled]			
Cache E000-E3FF:	[Disabled]			
Cache E400-E7FF:	[Disabled]			
Cache E800-EBFF:	[Write Protect]			
Cache EC00-EFFF:	[Write Protect]			
F1 Help	↑↓ Select Item	-/+ Change Values	F9 Setup Defaults	
ESC Exit	←→Select Menu	Enter Select►Sub-Menu	F10 Save and Exit	

3.4.3 Boot Feature Sub-Menu:

PhoenixBIOS cME FirstBIOS Pro Setup Utility **Main**	
Boot Features	Item Specific Help
Floppy check: [Disabled] Summary screen: [Disabled] Boot-time Diagnostic Screen: [Enabled] QuickBoot Mode: [Enabled]	Enabled Verifies floppy type on boot; disabled speeds boot.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

The following table shows the items that you can customize on the Boot Features sub-menu page:

Item	Options	Description
Floppy check	Disabled Enabled	Enabled verifies floppy type on boot; disabled speeds up boot process.
Summary screen	Disabled Enabled	Display system configuration on boot.
Boot-time Diagnostic Screen	Disabled Enabled	Display the diagnostic screen during boot.
QuickBoot Mode	Disabled Enabled	Allows the system to skip certain tests while booting. This will decrease the time needed to boot the system.

3.5 Advanced Menu:

PhoenixBIOS cME FirstBIOS Pro Setup Utility Main **Advanced** Security Power Boot Exit	
	Item Specific Help
►Advanced Chipset Control ►Advanced Processor Options ►I/O Device Configuration ►DMI Event Logging Installed O/S: [WIN2000] Reset Configuration Data: [NO] Large Disk Access Mode: [DOS] Enable ACPI (debug only): [Yes] Route Port 80h cycles to: [PCI] Legacy USB Support: [Enabled] PCI Hot-Plug Resources: [Enabled] ►Console Redirection	Select options for Advanced Chipset features.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

The following table shows the items that you can customize in the "Advanced" menu page:

Item	Options	Description
Installed O/S	Other Win95 Win98 WinMe Win2000	Select the operating system installed on your system which you will use most commonly. Note: An incorrect setting can cause some operating systems to display unexpected behavior.
Reset Configuration Data	Yes No	Select 'Yes' if you want to clear the extended system configuration data (ESCD) area.
Enable ACPI (debug only)	Yes No	En/Diable ACPI Bios (Advanced Configuration and Power Interface) Debug only, remove this option for production.
Route Port 80h cycles to	LPC PCI	Disabled – Port always LPC – Routes Port 80h I/O cycles to the LPC bus PCI – Routes Port 80h I/O cycles to the PCI bus
Legacy USB Support		Enable support for Legacy Universal Serial Bus
PCI Hot-Plug Resources	Disabled Enabled	Enable/Disable Hot-Plug support.

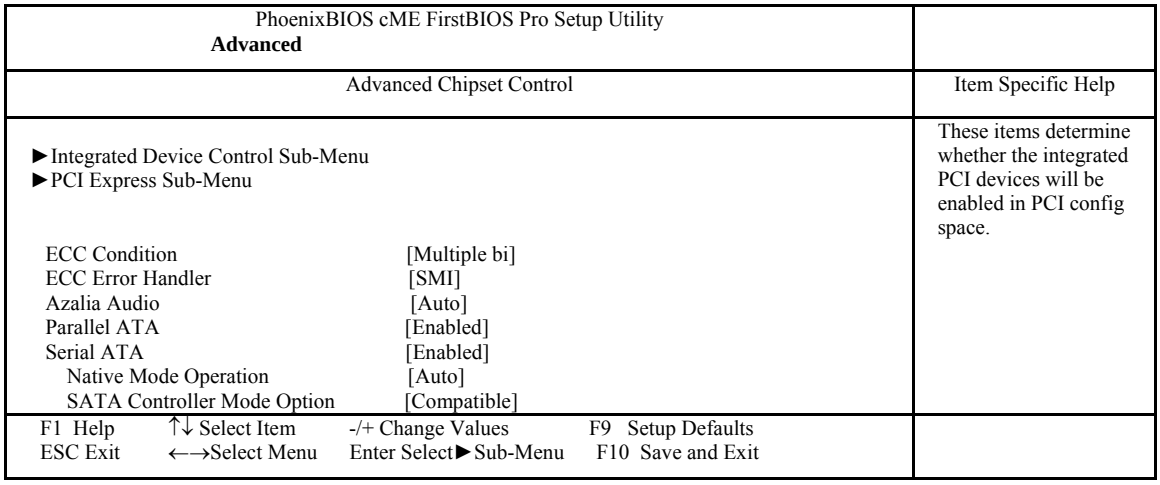
Special Explanation regarding Native Mode, Serial ATA and Parallel ATA:

In native mode, devices are assigned by PCI; it can support up to six devices, four on Parallel ATA, two on Serial ATA. Native mode is the default BIOS selection. It is represented by “Parallel ATA = BOTH“, “Serial ATA = Enabled“ and “Native Mode Operation = Both”.
GW100 also supports legacy mode where devices are assigned by I/O, IRQ. Legacy mode can support up to 4 devices. Legacy mode is enabled by a combination of selections on Native Mode Operation, Serial ATA and Parallel ATA items.
The following list shows the various combinations for legacy mode:

1. “Parallel ATA = BOTH”, “Serial ATA = “Disabled”: in this combination, Parallel ATA supports all four devices on channel 0 and 1.
2. “Parallel ATA = channel 0”, “Serial ATA = Enabled”, “Native Mode Operation = Auto”: in this combination, Parallel ATA supports two devices on channel 0 and Serial ATA supports two devices.
3. “Parallel ATA = channel 1”, “Serial ATA = Enabled”, “Native Mode Operation = Auto”: in this combination, Parallel ATA supports two devices on channel 1 and Serial ATA supports two devices.

3.5.1 Advanced Chipset Sub-Menu

The Advanced Chipset Control Sub Menu looks like the following:



The following table shows the items that you can customize on the Advanced Chipset sub-menu page:

Item	Options	Description
ECC Condition	None Single bit Multiple bit Both	Select ECC Error Condition to be detected
ECC Error Handler	None NMI SMI SCI	When an ECC error occurs, it generates an interrupt. Select the type of interrupt to report: NMI Non-Maskable SMI System Management SCI System Control
Azalia Audio	Disabled Auto	Disables or Enables onboard Audio
Parallel ATA	Disable Enable	Enable PATA
Serial ATA	Disable Enable	Enable SATA
Native Mode Operation	Auto Serial ATA	Choose Native Mode for ATA Note: Certain OS is not supported under native mode
SATA Controller Mode Option	Compatible Enhanced	Compatible mode: SATA and PATA drives are auto-detected and placed in Legacy mode. Enhanced (non-AHCI) mode: SATA and PATA drives are auto-detected and placed in Native IDE mode

		Note: Pre-Win2k OS's do not work in Enhanced mode.
SATA Raid Enable	Disabled Enabled	Enable SATA RAID functionality
SATA AHCI Enable	Disabled Enabled	Enable AHCI: WinXP-SP1 +IAA driver supports AHCI mode

3.5.2 Turning on Raid or AHCI

ATTENTION: To turn on Raid or AHCI (the *SATA RAID Enable* and *SATA AHCI Enable* options will ONLY appear if *SATA Controller Mode Option* is turned to *Enhanced*). Raid will ONLY be turned on if *SATA RAID Enable* is *Enabled*. The system should be restarted after it has been enabled. The raid setup menu can be accessed with *CTRL+I* during boot up:

The Advanced Chipset Control Sub-Menu should look like this if RAID or AHCI are to be enabled:

PhoenixBIOS cME FirstBIOS Pro Setup Utility **Advanced**	
Advanced Chipset Control	Item Specific Help
►Integrated Device Control Sub-Menu ►PCI Express Sub-Menu ECC Condition [Multiple bi] ECC Error Handler [SMI] Azalia Audio [Auto] Parallel ATA [Enabled] Serial ATA [Enabled] SATA Controller Mode Option [Enhanced] SATA RAID Enable [Disabled] SATA AHCI Enable [Disabled]	These items determine whether the integrated PCI devices will be enabled in PCI config space.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

The table below is the options you can customize after changing the option of **SATA Controller Mode Option** to **Enhanced**.

Item	Options	Description
SATA Controller Mode Option	Compatible Enhanced	Compatible mode: SATA and PATA drives are auto-detected and placed in Legacy mode. Enhanced (non-AHCI) mode: SATA and PATA drives are auto-detected and placed in Native IDE mode

		Note: Pre-Win2k OS's do not work in Enhanced mode.
SATA Raid Enable	Disabled Enabled	Enable SATA RAID functionality
SATA AHCI Enable	Disabled Enabled	Enable AHCI: WinXP-SP1 +IAA driver supports AHCI mode

3.5.3 Integrated Device Control Sub-Menu

The integrated device control sub-menu looks like the following:

PhoenixBIOS cME FirstBIOS Pro Setup Utility **Advanced**	
Advanced Chipset Control	Item Specific Help
USB Device 29, Function 3: [Enabled] USB Device 29, Function 2 & 3: [Enabled] USB Device 29, Function 1 & 2 & 3: [Enabled] USB Device 29, Function 0&1&2&3: [Enabled] USB Device 29, Function 7: [Enabled]	Enable or Disable this USB Device by setting item to the desired value.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

The table below is a list of things that you can customize in the integrated device control sub-menu.

Item	Options	Description
USB Device 29, Function 3	Disabled Enabled	Enable or Disable this USB Device by setting item to the desired value.
USB Device 29, Function 2 & 3	Disabled Enabled	Enable or Disable this USB Device by setting item to the desired value.
USB Device 29, Function 1 & 2 & 3	Disabled Enabled	Enable or Disable this USB Device by setting item to the desired value.
USB Device 29, Function 0&1&2&3	Disabled Enabled	Enable or Disable this USB Device by setting item to the desired value.
USB Device 29, Function 7	Disabled Enabled	Enable or Disable this USB Device by setting item to the desired value.

3.5.4 PCI Express Device Control Sub-Menu

The PCI Express Device Control Sub Menu looks like the following:

<table>
<tr><td>PhoenixBIOS cME FirstBIOS Pro Setup Utility
Advanced</td><td></td></tr>
<tr><td>PCI Express Device Control</td><td>Item Specific Help</td></tr>
<tr><td>PCI Express Base Address = E0000000h
GMCH Base Address = FED14000h
PCI Express Base Address = FED18000h
PCI Express Base Address = FED19000h

►PEG Port Sub-Menu

ICH7 RCB Base Address = FED19000h

►Root Port #1 Sub-Menu
►Root Port #5 Sub-Menu
►Root Port #6 Sub-Menu</td><td>These items are for debugging the PCI Express Graphics Port.</td></tr>
<tr><td>F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit</td><td></td></tr>
</table>

The following table shows the items that you can customize on the PCI Express Device Control sub-menu page:

Item	Options	Description
PEG Port Sub-Menu	Enabled Disabled	Disabled – Port always disabled. Enabled – Port always enabled. Auto – Only enable if card found. Debug – Only enable if card found. Don't force link width.
Root Port #1, #5, ad #6 Sub Menu	Auto Disabled Enabled	Disabled – Port always disabled (If Port #1 if disabled, then the rest of the Ports will also be disabled.) Enabled – Port always enabled. Auto – Only enable if card found.

3.5.5 Advanced Processor Options Sub Menu

The Advanced Processor Options Sub Menu looks like the following:

PhoenixBIOS cME FirstBIOS Pro Setup Utility **Advanced**	
Advanced Processor Options	Item Specific Help
Single Logical Proc. Mode [Disabled] Intel Enhanced Debug [Enabled] Machine Checking [Enabled] Fast String operations [Enabled] Compatible FPU Code [Enabled] Split Lock operations [Enabled] Adjacent Cache Line Prefetch [Enabled] Set Max Ext CPUID = 3 [Enabled] Echo TPR [Enabled] C1 Enhanced Mode [Enabled] No Execute Mode Mem Protection [Enabled] Frequency Ratio [X 8] Program CPU VID [42] Processor Power Management [GV1/GV3 Only]	Multi Core Processor Only single thread and core is enabled
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

The following table shows the items that you can customize on the Advanced Processor sub-menu page:

Item	Options	Description
Single Logical Proc. Mode	Disabled Enabled	Multi Core Processor Only single thread and core is enabled
Intel Enhanced Debug	Disabled Enabled	[FOR DEBUG ONLY]
Machine Checking	Disabled Enabled	[FOR DEBUG ONLY]
Fast String operations	Disabled Enabled	[FOR DEBUG ONLY]
Compatible FPU Code	Disabled Enabled	[FOR DEBUG ONLY]
Split Lock operations	Disabled Enabled	[FOR DEBUG ONLY]
Adjacent Cache Line Prefetch	Disabled Enabled	[FOR DEBUG ONLY]

Set Max Ext CPUID = 3	Disabled Enabled	Sets Max CPUID extended function value to 3.
Echo TPR	Disabled Enabled	
C1 Enhanced Mode	Disabled Enabled	
No Execute Mode Mem Protection	Disabled Enabled	
Frequency Ratio	X 8 X 14 X 15	Select the internal frequency multiplier of the CPU
Program CPU VID	##	[FOR DEBUG ONLY]
Processor Power Management	Disabled GV1/GV3 Only Enabled	Selects the Processor Power Management desired: Disabled = C states and GV1/GV3 are disabled. GV1/GV3 Only = C states are disabled. C States Only = GV1/GV3 are disabled. Enabled = C States and GV1/GV3 are enabled.

3.5.6 I/O Device Configuration Sub Menu

The I/O Device Configuration Sub Menu looks like the following:

PhoenixBIOS cME FirstBIOS Pro Setup Utility **Advanced**	
I/O Device Configuration	Item Specific Help
Serial port A: [Enabled] Base I/O Address: [3F8] Interrupt: [IRQ 4] Serial port B: [Auto] Mode: [Normal] Parallel port: [Enabled] Mode: [Bi-directional] Base I/O Address: [2F8] Interrupt: [IRQ 3] Floppy disk controller: [Enabled]	Configure serial port A using options: [Disabled] No configuration [Enabled] User configuration [Auto] BIOS or OS chooses configuration (OS Controlled) Displayed when controlled by OS
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

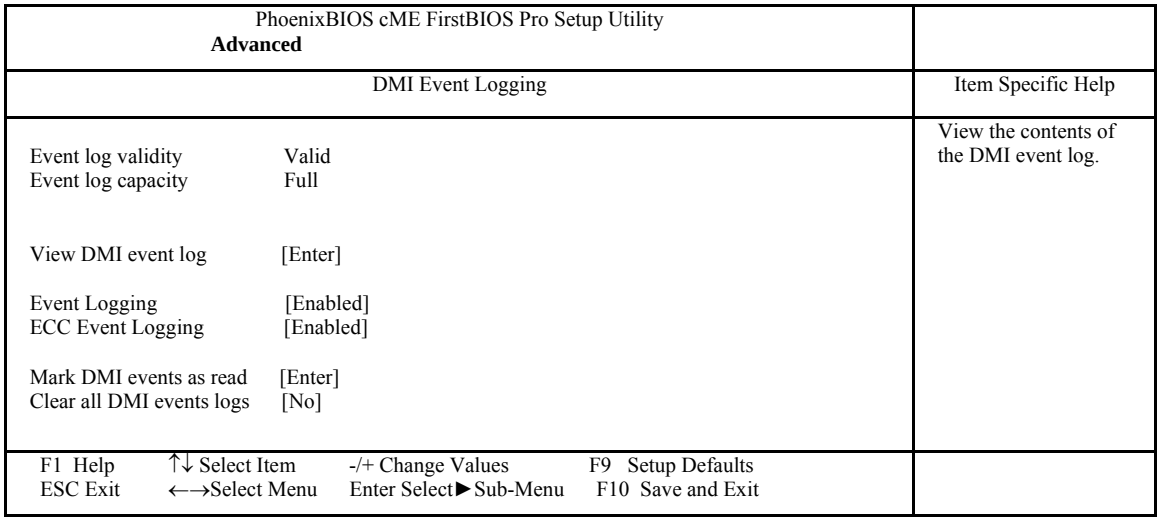
The following table shows the items that you can customize on the I/O Device Configuration sub-menu page:

Item	Options	Description
Serial port A	Disabled Enabled Auto	Configure serial port using options: [Disabled]: No configuration. [Enabled]: User configuration. [Auto]: BIOS or OS chooses configuration. (OS controlled): Displays when controlled by OS.
Serial Port Base I/O Address	3F8 2F8 3E8 2E8	Set the base I/O address for serial port.
Serial Port Interrupt	IRQ 3 IRQ 4	Set the interrupt for serial port.
Parallel port	Disabled Enabled Auto	Configure parallel port using options: [Disabled]: No configuration. [Enabled]: User configuration. [Auto]: BIOS or OS chooses configuration. (OS controlled): Displays when controlled by OS.

Parallel port: Mode	Bi-directional EPP ECP EPP & ECP	Set the mode for the parallel port using options: SPP EPP ECP EPP & ECP
Parallel port: Base I/O address	378 278 3BC	Set the base I/O address for the parallel port.
Parallel port: Interrupt	IRQ 5 IRQ 7	
Floppy disk controller	Disabled Enabled Auto	Configure using options: [Disabled]: No configuration. [Enabled]: User configuration. [Auto]: BIOS or OS chooses configuration. (OS controlled): Displays when controlled by OS.
Parallel port: Base I/O address	Primary Secondary	Set the base I/O for the floppy disk controller using options: Primary Secondary

3.5.7 DMI Event Logging Sub Menu

The DMI even logging sub-menu looks like the following:



The table below is the options that you can customize under the DMI Event Logging sub-menu:

Item	Options	Description
View DMI event log	Enter	View the contents of the DMI event log.
Event Logging	Disabled Enabled	Select 'Enabled' to allow logging of DMI events.
ECC Event Logging	Disabled Enabled	Select 'Enabled' to allow logging of ECC events.
Mark DMI events as read	Enter	Mark the contents of the DMI event log as read.
Clear all DMI event logs	No Yes	Setting this to 'Yes' will clear the DMI event log after rebooting.

3.5.8 Console Redirection Sub Menu

The Console Redirection Sub Menu looks like the following:

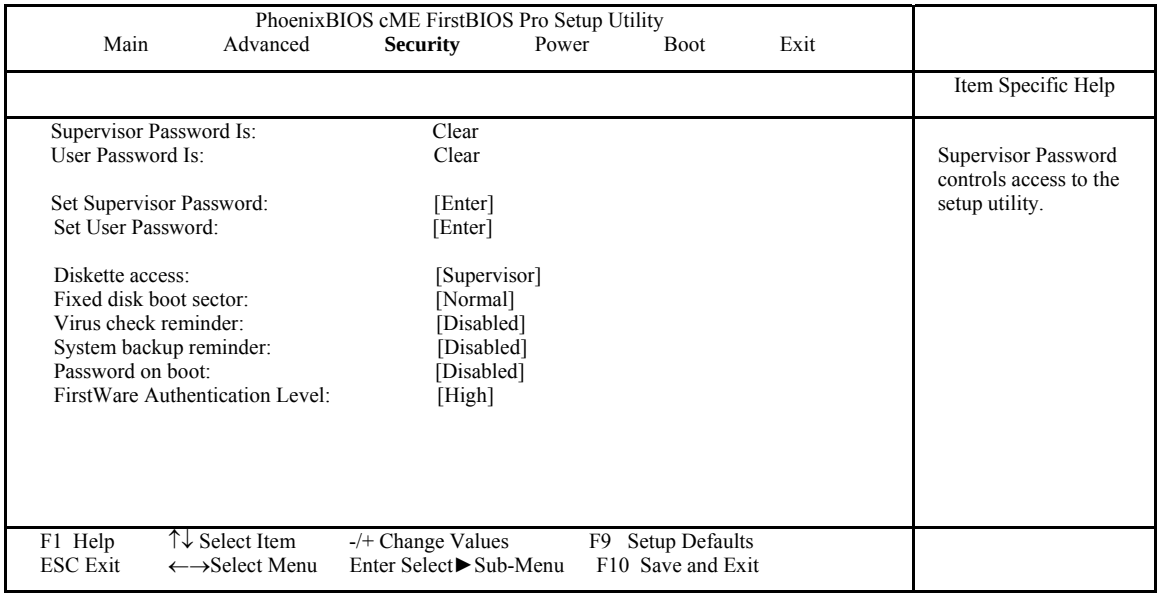
PhoenixBIOS cME FirstBIOS Pro Setup Utility **Advanced**	
Console Redirection	Item Specific Help
Com Port Address [Disabled] Baud Rate [19.2K] Console Type [PC ANSI] Flow Control [CTS/RTS] Console connection [Direct] Continue C.R. after POST [Off]	If enabled, it will use a port on the motherboard.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

The following table shows the items that you can customize on the Console Redirection sub-menu page:

Item	Options	Description
Com Port Address	Disabled On-board COM A On-board COM B	If enabled, it will use a port on the motherboard.
Baud Rate	300 1200 2400 9600 19.2K 38.4K 57.6K 115.2K	Enables the specified baud rate.
Console Type	VT100 VT100, 8bit PC-ANSI, 7bit PC-ANSI VT100+ VT-UTF8	Enables the specified console type.
Flow Control	None XON/XOFF CTS/RTS	Enables flow control
Console connection	Direct Via modem	Indicate whether the console is connected directly to the system or a modem is used to connect.
Continue C.R. after POST	Off On	Enables Console Redirection after OS has loaded.

3.6 Security Menu:

The Security Menu should look like this:



The following table shows the items that you can customize on the Security menu page:

Item	Options	Description
Supervisor Password Is	Clear Set	Displays the password if there is one.
User Password Is	Clear Set	Displays the password if there is one.
Set Supervisor Password	Enter	Supervisor Password controls access to the setup utility.
Set User Password	Enter	*Note: to use this feature, you must first set supervisor password.
Diskette access	User Supervisor	Controls access to diskette drives
Fixed disk boot sector	Normal Write Protect	Write protects boot sector on hard disk to protect against viruses
Virus check reminder	Disabled Daily Weekly Monthly	Displays reminder message at boot (daily, every Monday or 1st of every month)
System backup reminder	Disabled Daily Weekly Monthly	Displays reminder message at boot (daily, every Monday or 1st of every month)

Password on boot	Disabled Enabled	Enable password entry on boot
FirstWare Authentication Level	High Medium Low	Select FirstWare authentication level

3.7 Power Menu:

PhoenixBIOS cME FirstBIOS Pro Setup Utility Main Advanced Security **Power** Boot Exit	
	Item Specific Help
Power Saving: [Disabled] Resume On Time: [Off] Resume Time: [00:00:00] Power Button Behavior: [On/Off] Suspend Mode: [Suspend] After Power Failure: [Last Stae]	Maximum Power Savings conserves the greatest amount of system power. Maximum performance conserves power but allows greatest system performance. To alter these settings, choose Customized. To turn off power management, choose Disabled.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

The following table shows the items that you can customize on the Power menu page:

Item	Options	Description
Power Saving	Disabled Customized Maximum Power Savings Maximum Performance	Maximum Power Savings conserves the greatest amount of system power. Maximum Performance conserves power but allows greatest system performance. To alter these settings, choose Customized. To turn off power management, choose Disabled.
Resume On Time	Off On	Enabled wakes the system up at a specific time
Resume Time	##:##:##	Specify the time when the system is to wake up <Tab>, <Shift-Tab>, or <Enter> selects field.
Power Button Behavior	On/Off Wake/Sleep	Select the desired system power state after pressing power button. On/Off: System powers off. Wake/Sleep: System enter sleep mode.
Suspend Mode	Suspend Save to Disk	Select the type of Suspend mode. If you choose Save to Disk, the system will save its state to disk and power off. If you choose Suspend, the system will save this state but remain in a lower power mode. If you choose

		Suspend then you also have the option of choose Save to Disk.
After Power Failure	Stay Off Last State Power On	Sets the mode of operation IF an AC/Power Loss occurs. The two modes are: 'Stay Off' keeps the power off until power button is pressed; 'Last State' restores previous power state before loss occurred; 'Power On' turns on the system when AC power becomes available.

3.8 Boot Menu:

All the possible devices that you can boot from are automatically detected and listed on the page.
The items with a '+' in front of it indicates that the item is a category with more devices nested under it.
You can use <Enter> to display the nested devices.
The first device listed is the first boot device. In the example shown below, the CD-ROM is the first boot device, followed by the ST380023AS-(P0) in the category of hard drive.

PhoenixBIOS cME FirstBIOS Pro Setup Utility Main Advanced Security Power **Boot** Exit	
	Item Specific Help
Boot priority order: 1: Legacy Floppy Drives 2: IDE 0: ST380023AS-(S1) 3: IDE 1: 4: IDE 2: 5: IDE 3: 6: IDE 4: 7: IDE 5: 8: All IDE HD Excluded from boot order: : Bootable A : USB FDC: : USB HDD: : USB CDROM: : USB ZIP: : USB LS120: : PCI SCSI: : PCI BEV: : All PCI BE: : Legacy Network Card: : Other USB: : PCI: : 1394 HDD: : 1394 HDD:	Keys used to view or configure devices: <Enter> expands or collapses devices with a + or - <Ctrl-Enter> expands all <Shift-1> enables or disables a device. <+> and <-> moves the device up or down. <n> may move removable device between Hard Disk or Removable Disk. <d> Remove a device that is not installed.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

3.9 Exit Menu:

PhoenixBIOS cME FirstBIOS Pro Setup Utility Main Advanced Security Power Boot **Exit**	
	Item Specific Help
Exit Saving Changes Exit Discarding Changes Load Setup Defaults Discard Changes Save Changes	Exit System Setup and save your changes to CMOS.
F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←→Select Menu Enter Select►Sub-Menu F10 Save and Exit	

APPENDIX I: Glossary

ACPI (Advanced Configuration and Power Interface): a power management specification that allows the operating system to control the amount of power distributed to the computer's devices. Devices not in use can be turned off, reducing unnecessary power expenditure.

AGP (Accelerated Graphics Port): a PCI-based interface which was designed specifically for demands of 3D graphics applications. The 32-bit AGP channel directly links the graphics controller to the main memory. While the channel runs only at 66 MHz, it supports data transmission during both the rising and falling ends of the clock cycle, yielding an effective speed of 133 MHz.

ATAPI (AT Attachment Packet Interface): also known as IDE or ATA; a drive implementation that includes the disk controller on the device itself. It allows CD-ROMs and tape drives to be configured as master or slave devices, just like HDDs.

ATX: the form factor designed to replace the AT form factor. It improves on the AT design by rotating the board 90 degrees, so that the IDE connectors are closer to the drive bays, and the CPU is closer to the power supply and cooling fan. The keyboard, mouse, USB, serial, and parallel ports are built-in.

Bandwidth: refers to carrying capacity. The greater the bandwidth, the more data the bus, phone line, or other electrical path can carry. Greater bandwidth results in greater speed.

BIOS (Basic Input/Output System): the program that resides in the ROM chip, which provides the basic instructions for controlling your computer's hardware. Both the operating system and application software use BIOS routines to ensure compatibility.

Buffer: a portion of RAM which is used to temporarily store data; usually from an application though it is also used when printing and in most keyboard drivers. The CPU can manipulate data in a buffer before copying it to a disk drive. While this improves system performance (reading to or writing from a disk drive a single time is much faster than doing so repeatedly) there is the possibility of losing your data should the system crash. Information in a buffer is temporarily stored, not permanently saved.

Bus: a data pathway. The term is used especially to refer to the connection between the processor and system memory, and between the processor and PCI or ISA local buses.

Bus mastering: allows peripheral devices and IDEs to access the system memory without going through the CPU (similar to DMA channels).

Cache: a temporary storage area for data that will be needed often by an application. Using a cache lowers data access times since the information is stored in SRAM instead of slower DRAM. Note that the cache is also much smaller than your regular memory: a typical cache size is 512KB, while you may have as much as 4GB of regular memory.

Closed and open jumpers: jumpers and jumper pins are active when they are "on" or "closed", and inactive when they are "off" or "open".

CMOS (Complementary Metal-Oxide Semiconductors): chips that hold the basic startup information for the BIOS.

COM port: another name for the serial port, which is called as such because it transmits the eight bits of a byte of data along one wire, and receives data on another single wire (that is, the data is transmitted in serial form, one bit after another). Parallel ports transmit the bits of a byte on eight different wires at the same time (that is, in parallel form, eight bits at the same time).

DDR (Double Data Rate): a technology designed to double the clock speed of the memory. It activates output on both the rising and falling edge of the system clock rather than on just the rising edge, potentially doubling output.

DIMM (Dual In-line Memory Module): faster and more capacious form of RAM than SIMMs, and do not need to be installed in pairs.

DIMM bank: sometimes called DIMM socket because the physical slot and the logical unit are the same. That is, one DIMM module fits into one DIMM socket, which is capable of acting as a memory bank.

DMA (Direct Memory Access): channels that are similar to IRQs. DMA channels allow hardware devices (like soundcards or keyboards) to access the main memory without involving the CPU. This frees up CPU resources for other tasks. As with IRQs, it is vital that you do not double up devices on a single line. Plug-n-Play devices will take care of this for you.

DMI: A specification that establishes a standard framework for managing networked computers. DMI covers hardware and software, desktop systems and servers, and defines a model for filtering events and describing interfaces.

DRAM (Dynamic RAM): widely available, very affordable form of RAM which looses data if it is not recharged regularly (every few milliseconds). This refresh requirement makes DRAM three to ten times slower than non-recharged RAM such as SRAM.

ECC (Error Correction Code or Error Checking and Correcting): allows data to be checked for errors during run-time. Errors can subsequently be corrected at the same time that they're found.

EEPROM (Electrically Erasable Programmable ROM): also called Flash BIOS, it is a ROM chip which can, unlike normal ROM, be updated. This allows you to keep up with changes in the BIOS programs without having to buy a new chip.

ESCD (Extended System Configuration Data): a format for storing information about Plug-n-Play devices in the system BIOS. This information helps properly configure the system each time it boots.

Firmware: low-level software that controls the system hardware.

Form factor: an industry term for the size, shape, power supply type, and external connector type of the Personal Computer Board (PCB) or motherboard. The standard form factors are the AT and ATX.

IDE (Integrated Device/Drive Electronics): a simple, self-contained HDD interface. It can handle drives up to 8.4 GB in size. Almost all IDEs sold now are in fact Enhanced IDEs (EIDEs), with maximum capacity determined by the hardware controller.

IDE INT (IDE Interrupt): a hardware interrupt signal that goes to the IDE.

I/O (Input/Output): the connection between your computer and another piece of hardware (mouse, keyboard, etc.)

IRQ (Interrupt Request): an electronic request that runs from a hardware device to the CPU. The interrupt controller assigns priorities to incoming requests and delivers them to the CPU. It is important that there is only one device hooked up to each IRQ line; doubling up devices on IRQ lines can lock up your system. Plug-n-Play operating systems can take care of these details for you.

Latency: the amount of time that one part of a system spends waiting for another part to catch up. This occurs most commonly when the system sends data out to a peripheral device and has to wait for the peripheral to spread (peripherals tend to be slower than onboard system components).

NVRAM: ROM and EEPROM are both examples of Non-Volatile RAM, memory that holds its data without power. DRAM, in contrast, is volatile.

OPROM: Firmware on adapter cards that control bootable peripherals. The system BIOS interrogates the option ROMs to determine which devices can be booted.

Parallel port: transmits the bits of a byte on eight different wires at the same time.

PCI (Peripheral Component Interconnect): a 32 or 64-bit local bus (data pathway) which is faster than the ISA bus. Local buses are those which operate within a single system (as opposed to a network bus, which connects multiple systems).

PCI PIO (PCI Programmable Input/Output) modes: the data transfer modes used by IDE drives. These modes use the CPU for data transfer (in contrast, DMA channels do not). PCI refers to the type of bus used by these modes to communicate with the CPU.

PCI-to-PCI bridge: allows you to connect multiple PCI devices onto one PCI slot.

PnP (Plug-n-Play): a design standard that has become ascendant in the industry. Plug-n-Play devices require little set-up to use. Devices and operating systems that are not Plug-n-Play require you to reconfigure your system each time you add or change any part of your hardware.

RAID (Redundant Array of Independent Disks): a way for the same data to be stored in different places on many hard drives. By using this method, the data is stored redundantly and multiple hard drives will appear as a single drive to the operating system. RAID level 0 is known as striping, where data is striped (or overlapped) across multiple hard drives, but offers no fault-tolerance. RAID level 1 is known as mirroring, which stores the data within at least two hard drives, but does not stripe. RAID level 1 also allows for faster access time and fault-tolerance, since either hard drive can be read at the same time. RAID level 0+1 is both striping and mirroring, providing fault-tolerance, striping, and faster access all at the same time.

SDRAM (Synchronous Dynamic RAM): called as such because it can keep two sets of memory addresses open simultaneously. By transferring data alternately from one set of addresses and then the other, SDRAM cuts down on the delays associated with non-synchronous RAM, which must close one address bank before opening the next.

Serial port: called as such because it transmits the eight bits of a byte of data along one wire, and receives data on another single wire (that is, the data is transmitted in serial form, one bit after another).

Sleep/Suspend mode: in this mode, all devices except the CPU shut down.

SRAM (Static RAM): unlike DRAM, this type of RAM does not need to be refreshed in order to prevent data loss. Thus, it is faster and more expensive.

SMBIOS: The system management specification addresses how motherboard and system vendors present management information about their products in a standard format by extending the BIOS interface on Intel architecture systems.

Standby mode: in this mode, the video and hard drives shut down; all other devices continue to operate normally.

UltraDMA-33/66/100: a fast version of the old DMA channel. UltraDMA is also called UltraATA. Without a proper UltraDMA controller, your system cannot take advantage of higher data transfer rates of the new UltraDMA/UltraATA hard drives.

USB (Universal Serial Bus): a versatile port. This one port type can function as a serial, parallel, mouse, keyboard or joystick port. It is fast enough to support video transfer, and is capable of supporting up to 127 daisy-chained peripheral devices.

ZCR (Zero Channel RAID): ZCR card provides RAID-5 solution by working with the onboard SCSI/SATA/SATA-II chip through special PCI-X slot with Intel RAIDIOS logic, thus lowering cost of RAID-5 solution