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CHAPTER 1 PRODUCT INFORMATION

Thanks for purchasing this Intel 810 series chipset ATX mainboard.

This user's manual contains all the information and features that show you how to use the mainboard. Please take a moment to familiarize yourself with the design and organization of this manual.

1.1 Manual Features

This manual is divided into the following four sections:

Chapter 1: Product Information

A brief overview of what comes in the mainboard package, the mainboard layout and the specification it appears.

Chapter 2: Hardware Installation

Tell you the usage of the mainboard jumpers and the connectors.

Chapter 3: CMOS Setup

A summary of the mainboard CMOS (BIOS) Setting.

Chapter 4: Software Utilities

Introduction of some useful mainboard software utilities.

1.2 Package Check List

This mainboard package contains the following items.

The package includes:

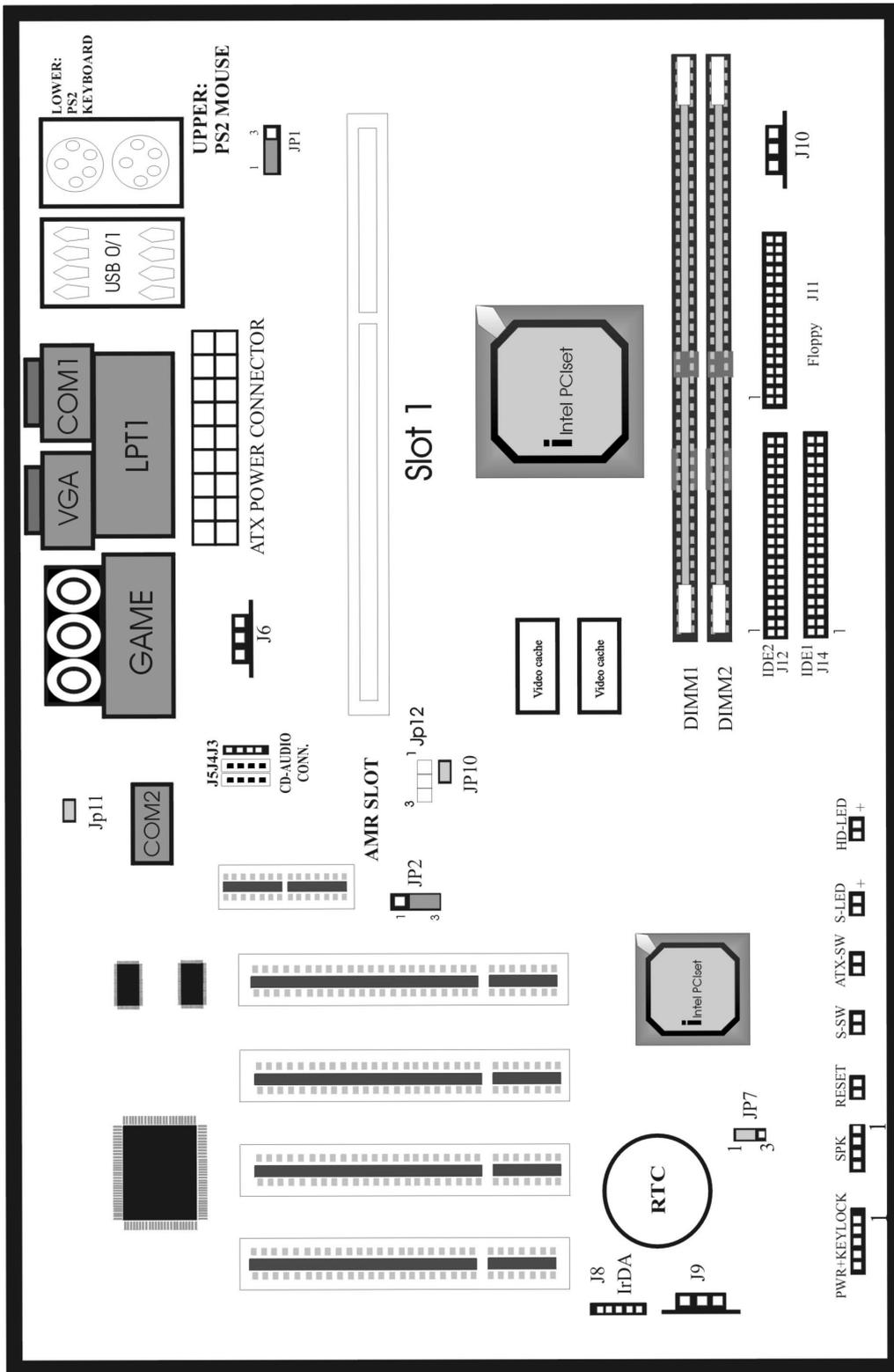
- One Intel 810 series chipset ATX Mainboard
- One Floppy Interface Cable
- One IDE Interface Cable
- One Driver CD
- One User's Manual

1.3 Mainboard Specification

Form Factor	<ul style="list-style-type: none"> ● ATX form factor
Board Size	<ul style="list-style-type: none"> ● 30.5cm x 19.1cm
CPU	<ul style="list-style-type: none"> ● Supports Pentium III, Pentium III Coppermine, Celeron and Celeron 128K CPU ● Supports FSB 66/100/133 MHz ● Supports CPU type/clock by jumperless BIOS setup: ● Jumperless Overclock: <ul style="list-style-type: none"> - Supports CPU Clock Ratio: 3.0/3.5/4.0/4.5/5.0/5.5/6.0/6.5/7.0/7.5/8.0x - Supports CPU Clock Frequency: 66//75/83/100/102/112/124/133/

System Memory	<ul style="list-style-type: none"> ● DIMM 168-pin x 2, SDRAM maximum 512MB/128Mb or 256MB/64Mb ● Supports 16M-bit /64M-bit /128M-bit /256M-bit SDRAM technology ● Refresh Mechanism: CBR supported only ● Enhanced Open page Arbitration SDRAM paging scheme
Chipset	<ul style="list-style-type: none"> ● Intel 810 Chipset including: <ul style="list-style-type: none"> - Intel 82810 or 82810-DC100 or 82810E - Intel 82801AA (U-DMA/66) or Intel 82801AB (U-DMA/33)
Graphic Function	<ul style="list-style-type: none"> ● 2D/3D enhancement function (Intel i752 code)
Display Cache	<ul style="list-style-type: none"> ● 4MB for Intel 82810-DC100 and 82810E
Sound	<ul style="list-style-type: none"> ● AC'97 Sound
Expansion Slots	<ul style="list-style-type: none"> ● 1 x AMR bus ● 4 x PCI bus with bus master mode
Serial Port	<ul style="list-style-type: none"> ● Two serial ports UART 16C550 compatible ● Sets serial port2 to operate in normal mode , IrDA
Parallel Port	<p>One parallel port supports :</p> <ul style="list-style-type: none"> ● SPP-standard parallel port ● EPP-enhanced parallel port ● ECP-extended capabilities port
Floppy Interface	<p>Supports drives inches/format with:</p> <ul style="list-style-type: none"> ● 3.5 inches—720KB/1.44MB/2.88MB ● 5.25 inches—360KB/1.2MB
IDE Interface	<ul style="list-style-type: none"> ● Dual PCI IDE interface supported up to 4 x IDE HDD or CDROM ● Supports PIO mode4 , DMA mode2 and Ultra DMA33 (82801AB) or Ultra DMA33/66 (82801AA)
USB Interface	<ul style="list-style-type: none"> ● Two USB ports supported ● USB legacy keyboard/mouse function supported ● Supports Wake-up from Sleeping States S1-S4
PS/2 Mouse	<ul style="list-style-type: none"> ● PS/2 mouse supported by connector onboard
Keyboard	<ul style="list-style-type: none"> ● PS/2 keyboard supported by connector onboard
RTC and Battery	<ul style="list-style-type: none"> ● RTC build in chipset (ICH 82801) ● Lithium (CR-2032) battery
Wake Up Function	<ul style="list-style-type: none"> ● Modem ring wake up ● RTC Alarm wake up ● USB wake up ● PCI events wake up
Synchronous Switching Regulator	<ul style="list-style-type: none"> ● High efficient synchronous switching regulator for CPU core voltage from 1.3V to 2.05V ● Supports over-voltage / over-current protection function
Hardware Monitor (Optional)	<ul style="list-style-type: none"> ● 3 fans (CPU fan, Housing fan, Auxiliary fan) ● Monitor 9 kinds of system voltage (5V_Dual, 12V, 5V, 1.5V, 3.3V, VCORE, -12V, -5V, battery), Detects VCORE from VID0-4 ● CPU thermal monitor (read from CPU or thermometer)
Power Connector	<ul style="list-style-type: none"> ● Supports ATX (20-pin) power connector
Power On Function	<ul style="list-style-type: none"> ● Panel switch power on ● Keyboard power on
BIOS	<ul style="list-style-type: none"> ● Award BIOS ● Year 2000 Compliance ● PCI 2.1 Compliance ● PnP BIOS v1.0a Compliance

	<ul style="list-style-type: none"> ● APM v1.2 Compliance ● DMI 2.0 Compliance ● Flash/Upgrade BIOS protection ● Supports ACPI (Advanced Configuration and Power Interface) and OS Directed Power Management ● Supports SOFT power ● Floppy drive swapping function supported ● Bus speed selected by BIOS ● Integrated hardware Random Number Generator (RNG) ● Register-based locking ● Hardware-based locking
LED Indicator	<ul style="list-style-type: none"> ● System power LED ● HDD activity LED ● System Suspend LED (programming LED blinking to show S1-S4 mode)



Intel 810 series chipset slot 1 type mainboard

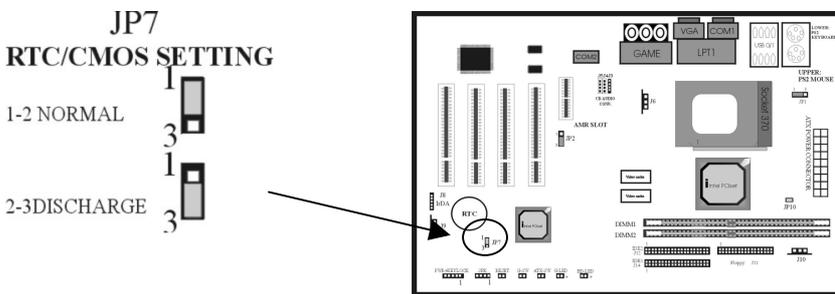
CHAPTER 2 HARDWARE INSTALLATION

This section gives you a step-by-step procedure on how to install your system. Follow each section accordingly.

2-1 Jumper Settings

Please refer the following figures for the locations of the jumpers on the mainboard.

2-1.1 CMOS Clear Setting



To clear CMOS, please follow the steps below:

1. Power off the system and unplug the chassis AC power cord.
2. Short JP7 at pin 2-3 for few seconds.
3. Set JP7 back to its Normal position at pin 1-2.
4. Plug the AC power cord to the chassis.
5. Power on the system and load the BIOS setup default.

2-1.2 CPU Type Setting

2-1.3

This mainboard supports jumperless CPU type setting, no jumper or switch is needed. Select your CPU Type under “CHIPSET FEATURES SETUP” in BIOS (CMOS) Setup Menu.

The Intel Pentium II CPU currently available in the market are listed as below:

CPU Type	CPU Clock Ratio	CPU Clock Frequency
300 MHz	4.5x	66MHz
333 MHz	5.0x	66MHz
350 MHz	3.5x	100MHz

366 MHz	5.5x	66MHz
400/66 MHz	6.0x	66MHz
400/100 MHz	4.0x	100MHz
433/66 MHz	6.5x	66MHz
450/100 MHz	4.5x	100MHz
466/66 MHz	7.0x	66MHz
500/66 MHz	7.5x	66MHz
500/100 MHz	5.0x	100MHz

This mainboard also supports CPU over-clocking by adjusting the CPU Clock Frequency and CPU Clock Ratio under BIOS Setup.

System Frequency = CPU Clock Ratio * CPU Clock Frequency

System Frequency = CPU Clock Ratio * CPU Clock Frequency

The available settings are:

- **CPU Clock Frequency**

66 / 75 / 83 / 100 / 112 / 124 / 133

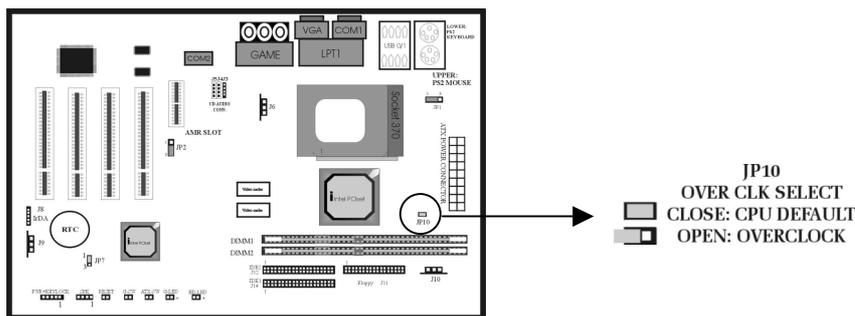
- **CPU Clock Ratio**

3x / 3.5x / 4x / 4.5x / 5x / 5.5x / 6x / 6.5x / 7x / 7.5x / 8x

Warning: At this moment, Intel PPGA370 Celeron CPU normally supports 66MHz CPU Clock Frequency, the

other CPU Clock Frequency 75/83/100/102/112/133 are available only for internal test or end-user over-clocking testing, which may cause your system unstable or serious damage.

2-1.3 Host Clock Overspeed



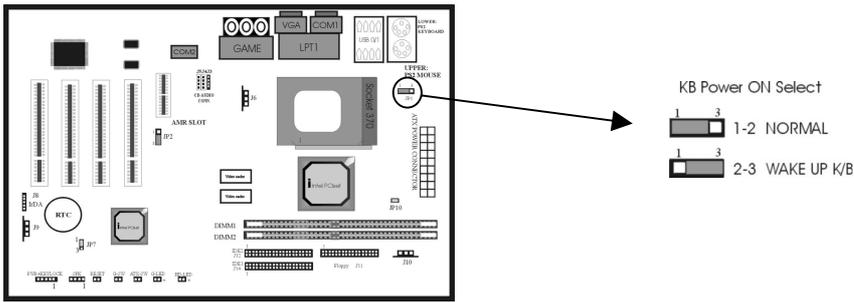
The mainboard supports CPU Host Clock Overspeed. Short JP10 pin to run CPU at standard 66/100MHz CPU Host Clock (Default). Open JP10 pin to run overspeeding 66MHz Host Clock based CPU to 100MHz or above CPU Host Clock.

CPU Frequency Detection JP12

Close Pin 1-2 Set CPU frequency to run at host clock 100 Mhz or above

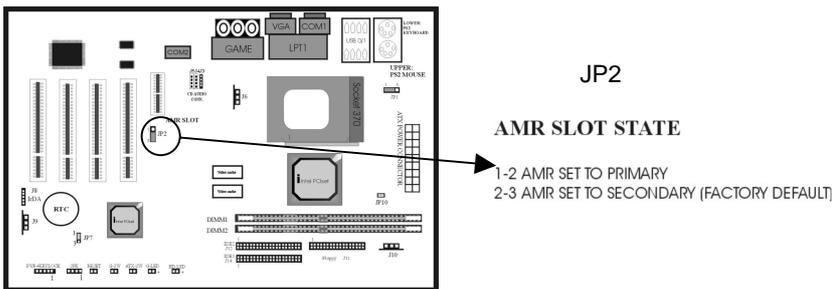
Close Pin 2-3 CPU frequency will be set according to its default setting. (Default)

2-1.4 Keyboard Power On Function



Set JP1 at pin 2-3 to activate the keyboard power wake up function. Set JP1 at pin 1-2 to have normal keyboard without wakeup function (default).

2-1.5 On Board AC'97 State

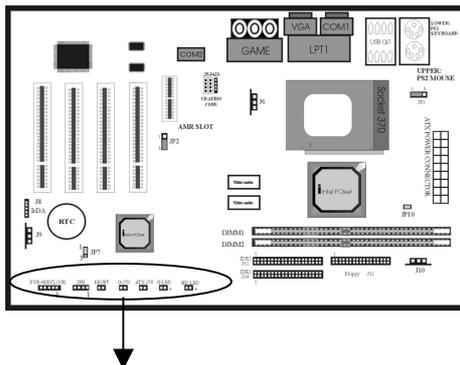


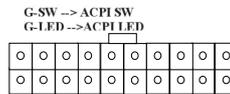
Set JP2 at pin 1-2 to set AMR slot to primary state. Set JP2 at pin 2-3 to set AMR slot to secondary state
 让JP2 在pin 1-2
 (default).

2-2 Connectors

2-3

2-2.1 Panel Connector

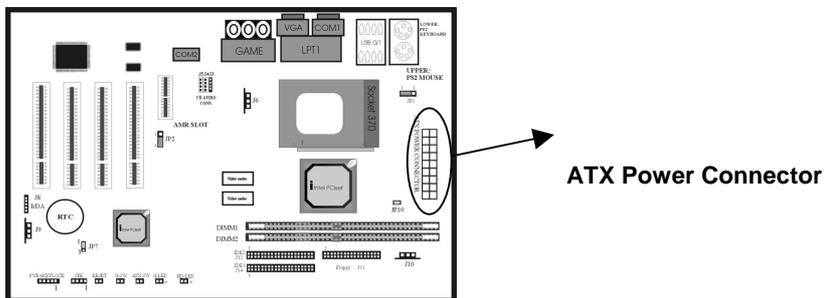




- **PWR LED, Keylock** ATX Power LED Connector & keylock (5 pins)
- **SPK** Chassis Speaker Connector (4 pins)
- **RESET** Reset Switch Connector (2 pins)
- **G-SW** ACPI Suspend Switch Connector (2 pins)
- **ATX-SW** ATX Power On Button (2 pins)
- **G-LED** ACPI Suspend LED Connector (4 pins)
- **HDD LED** HDD LED Connector (2 pins)

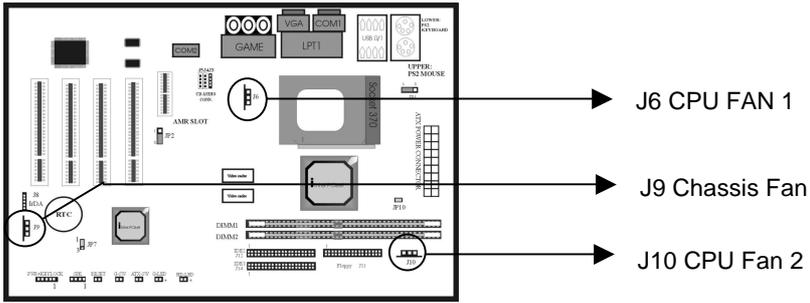
2-2.2 Power Connector

Connect the 20-pin ATX power supply cable to this power connector. Make sure the right plug-in direction and the power supply is off before connecting or disconnecting the power cable.



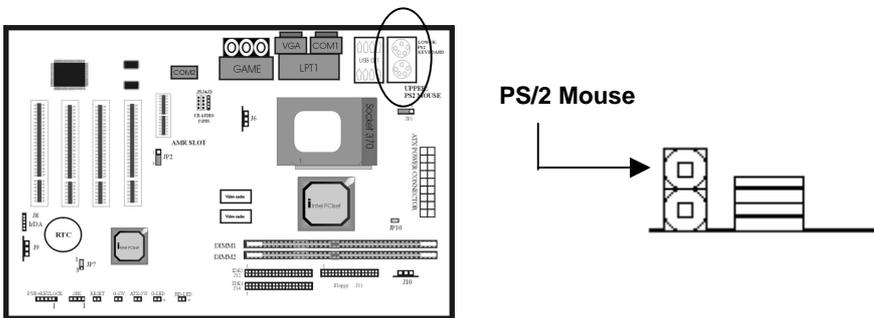
2-2.3 Fan Connectors

Connect the CPU and Chassis fan cables to the fan connectors shown below.



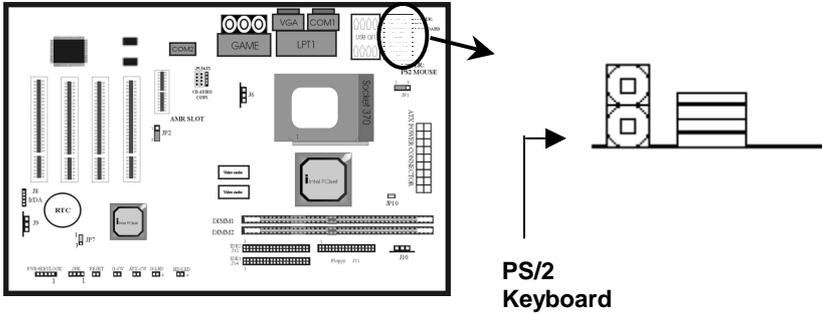
2-2.4 PS/2 Mouse Connector

Connect the PS/2 mouse to the onboard 6-pin Mini-Din connector.



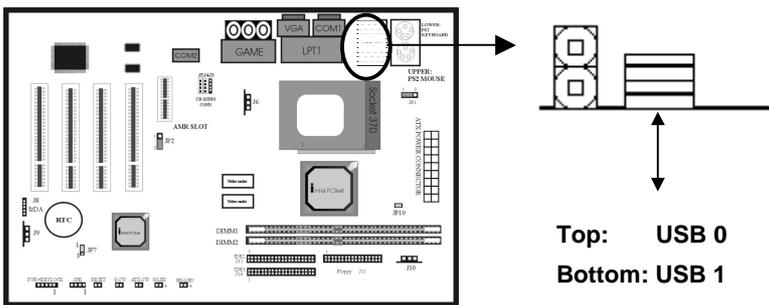
2-2.5 Keyboard Connector

Connect the PS/2 keyboard to the onboard 6-pin Mini-Din connector.



2-2.6 USB Device Connector

Connect your USB device(s) to the onboard USB connector.

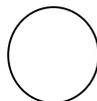


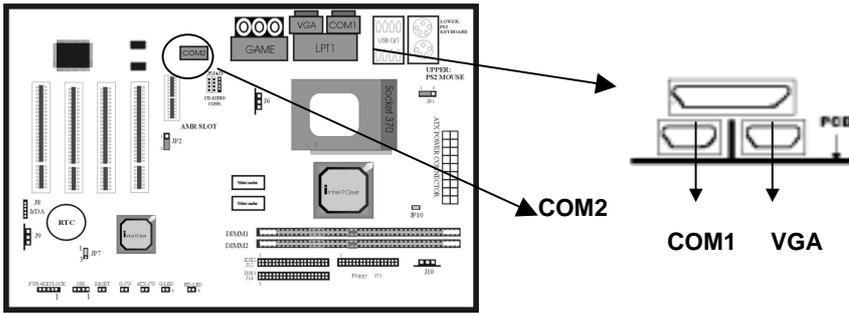
2-2.7 Serial Device(COM1/COM2) & VGA Connectors

2-2.8

Connect your serial device(s) to the onboard serial connectors marked as **COM1** and **COM2**. Connect the 15 pins

VGA Monitor Output marked as **VGA** to your system monitor or other VGA compatible devices.

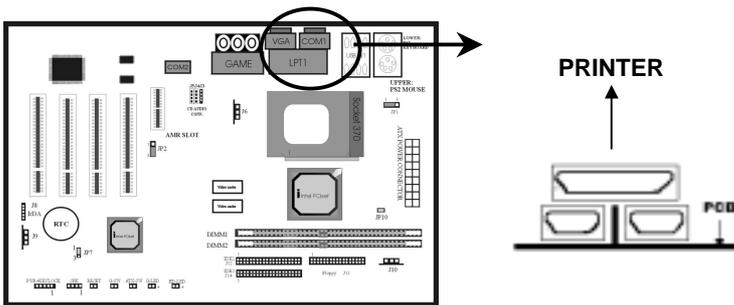




2-2.9 Printer Connctor

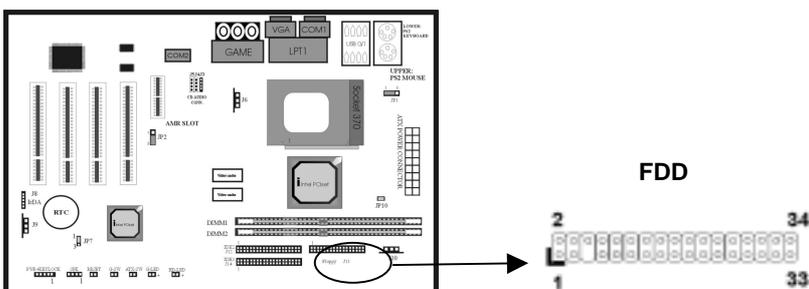
2-2.10

Connect your local printer to the onboard 25-pin printer connector.



2-2.9 Floppy Drive Connector

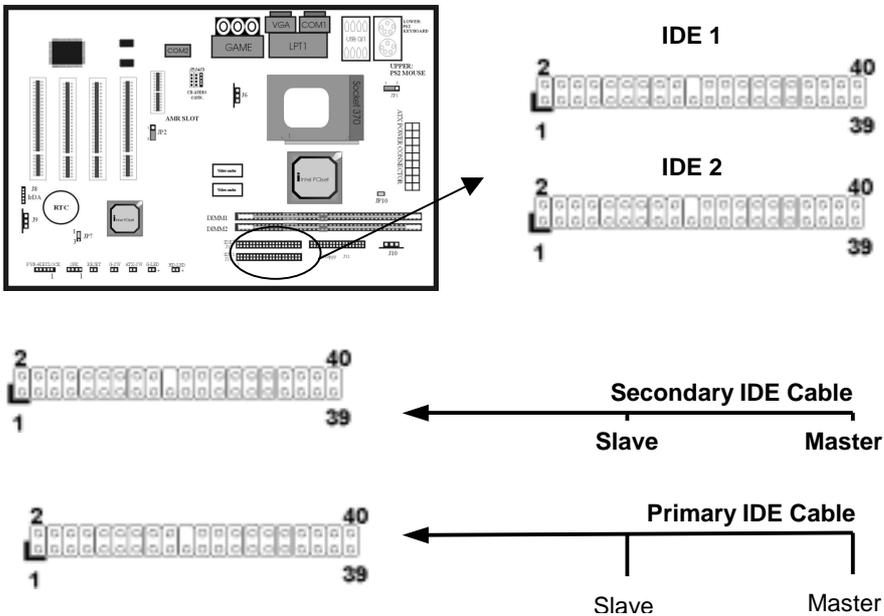
Connect the floppy drive cable to the onboard 34-pin floppy drive connector.



2-2.11 IDE Hard Disk and CD-OM Connector

2-2.12

Connect your IDE devices to the onboard 40-pin IDE connectors marked as IDE1 and IDE2.



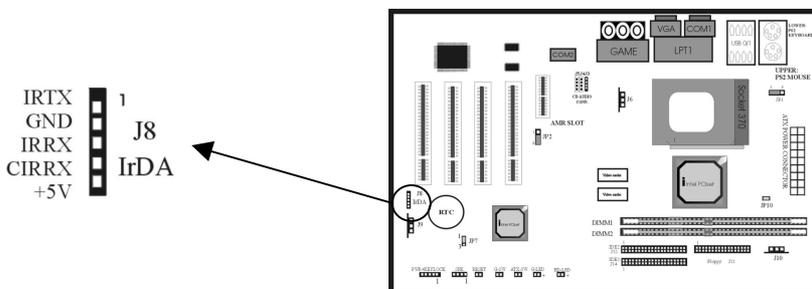
It is suggested that you connect the IDE devices to your IDE cables as the figure shows. Each IDE channel,

either Primary or Secondary, supports two IDE devices which must be set differently to master mode and slave

mode. (Refer to your hard disk and CD-ROM user's manual for detailed settings of IDE master and slave mode.)

2-2.11 IrDA Connector

Connect your IR devices to the onboard IrDA connectors.

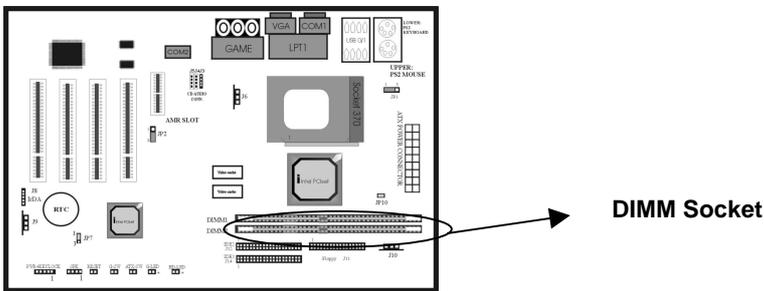


2-3 System Memory Installation

2-4

There are 2pcs 168-pin **DIMM** (Dual Inline Memory Module) sockets on the mainboard which support

Synchronous DRAM and Registered SDRAM, and allow you install system memory maximum up to 768MB.



2-3.1 Type

This mainboard supports Synchronous DRAM and Registered SDRAM. However, mixing SDRAM and Registered SDRAM is not allowed. Install one type only in your system for better compatibility.

2-3.2 Speed

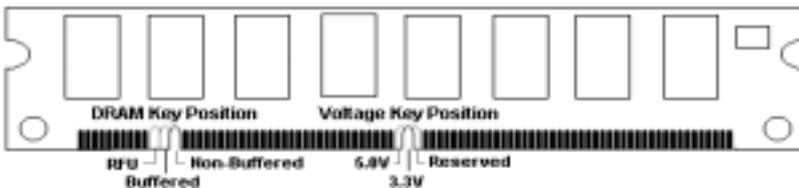
2-3.3

This motherboard supports PC-100 or PC-133 memory only for high speed operation.

2-3.4 Buffered and Non-buffered

2-3.5

Only the non-buffered DIMM can be used in this mainboard.



otch position shown above.

2-3.6 2-clock and 4-clock signal

2-3.7

Both 2-clock and 4-clock SDRAM DIMM supported by this mainboard.

2-3.8 Parity and Non-parity

2-3.9

This mainboard supports standard 64 bit (Non-parity) and 72 bit (Parity) DIMM modules.

2-3.10 Memory Auto detection by BIOS

2-3.11

This mainboard BIOS can automatically detect the DIMM memory size and type, so you do not need to adjust any hardware or software settings. The maximum memory size supported up to 512MB.

2-3.12 Suggested SDRAM combination

2-3.13

This mainboard supports the following SDRAM combination.

DIMM Location	DIMM Size	Max. Memory Size
DIMM 1	SDRAM 8, 16, 32, 64 128, 256MB	256MB
DIMM 2	SDRAM 8, 16, 32, 64 128, 256MB	256MB
	Total System Memory	512MB

Total Memory Size = DIMM1 + DIMM2

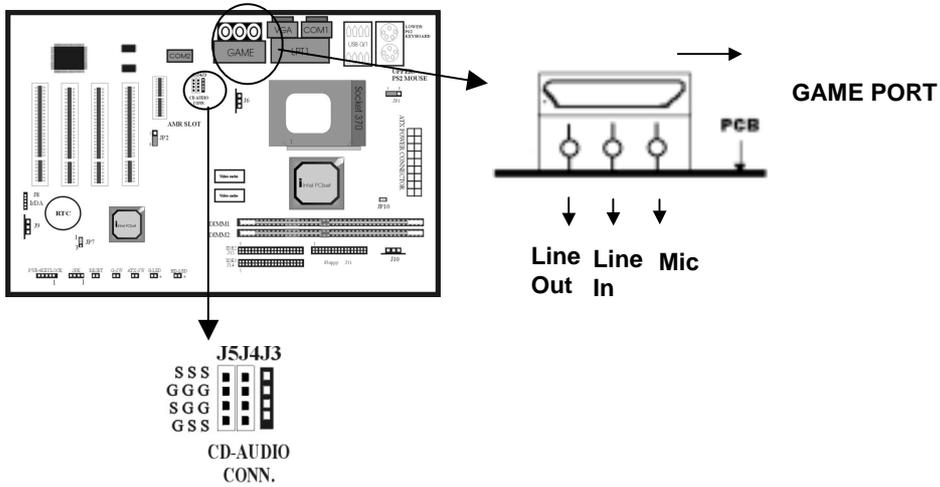
Important

You must insert SDRAM module into DIMM 0 in order to use VGA on board function.

2-4 Audio / Game Connector

2-5

Connect your audio devices to the audio connector as below.



Jumper for Mic Compatibility -- JP11

Default is "Open" which is good for the most common type of microphone in the market. However, should you experience problems working with your microphone, then please change the jumper setting to

"Close".

CHAPTER 3 BIOS SETUP

Introduction

This manual discusses BIOS Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

Starting Setup

The BIOS is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing immediately after switching the system on, or
2. by pressing the key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

Press DEL to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Key	Function
Up Arrow	Move to the previous item
Down Arrow	Move to the next item
Left Arrow	Move to the item on the left (menu bar)
Right Arrow	Move to the item on the right (menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
Esc key	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
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the fail-safe defaults from BIOS default table
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

Table 1 Legend Keys

Navigating through the menu bar

Use the left and right arrow keys to choose the menu you want to be in.

To display a sub menu, use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A “>” pointer marks all sub menus.

Getting Help

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> or the F1 key again.

In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the BIOS supports an override to the CMOS settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide

the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

Main Menu

Once you enter the BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

CMOS Setup Utility - Copyright (C) 1984-1998

Standard CMOS Feature	Load Fail-Safe Defaults
Advanced BIOS Feature	Load Optimized Defaults
Advanced Chipset Feature	Set Supervisor Password
Integrated Peripherals	Set User Password
Power Management Setup	Save & Exit Setup
PnP/PCI Configurations	Exit Without Saving
Frequency/Voltage Control	
Esc : Quit	↑ ↓ ← → : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type....	

Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Features

Use this menu for basic system configuration.

Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

PnP / PCI Configuration

This entry appears if your system supports PnP / PCI.

Frequency/ Voltage Control

Use this menu to specify your settings for frequency/voltage control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Supervisor / User Password

Use this menu to set User and Supervisor Passwords.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Save

Abandon all CMOS value changes and exit setup.

Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Standard CMOS Features		Item Help
Date:	Mon, Feb 8 1999	
Time:	16:19:20	
ⓐ IDE Primary Master	2557 MB	Menu Level >
ⓐ IDE Primary Slave	None	Change the day, month, year and century
ⓐ IDE Secondary Master	None	
ⓐ IDE Secondary Slave	None	
Drive A	1.44M, 3.5 in. None	
Video	EGA/VGA	
Halt On	All Errors	
Based Memory	640K	
Extended Memory	64512K	
Total Memory	65536K	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Figure 1: The Main Menu

Main Menu Selections

This table shows the selections that you can make on the Main Menu

Item	Options	Description
Date	Month DD YYYY	Set the system date. Note that the 'Day' automatically changes when you set the date
Time	HH : MM : SS	Set the system time
IDE Primary Master	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
IDE Secondary Master	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options

IDE Secondary Master	Options are in its sub menu (described in Table 3)	Press <Enter> to enter the sub menu of detailed options
Drive A Drive B	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	N/A	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system

Table 2 Main Menu Selections

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive.

Figure 2 shows the IDE primary master sub menu.

CMOS Setup Utility – Copyright © 1984-1998 Award Software
IDE Primary Master

IDE HDD Auto-Detection	<u>Press Enter</u>	Item Help
IDE Primary Master	Auto 2557 MB	Menu Level >>
Access Mode	Auto	
Cylinder	4956	To auto-detect the HDD's size, head... on this channel
Head	16	
Precomp	0	
Landing Zone	4955	
Sector	63	
↑↓←→Move Enter: Select +/-PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Figure 2 IDE Primary Master sub menu

Use the legend keys to navigate through this menu and exit to the main menu. Use Table 3 to configure the hard disk.

Item	Options	Description
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
IDE Primary Master	None Auto Manual	Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE !
Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that

		this size is usually slightly greater than the size of a formatted disk given by a disk checking program.
Access Mode	Normal LBA Large Auto	Choose the access mode for this hard disk
The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'		
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk.
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	**** Warning: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	****
Sector	Min = 0 Max = 255	Number of sectors per track

Table 1 Hard disk selections

Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

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Advanced BIOS Features

Virus Warning	Enabled	Item Help
CPU Internal Cache	Enabled	
External Cache	Enabled	
CPU L2 Cache ECC Checking	Enabled	
Quick Power On Self Test	Disabled	
First Boot device	Floppy	
Second Boot device	HDD-0	
Third Boot device	Floppy	
Boot other device	Disabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Disabled	
Boot Up NumLock Status	Off	
Gate A20 Option	Normal	
Typematic Rate Setting	Disabled	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Report NO FDD For Win 95	No	
Menu Level ▶ Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep		
↑↓←→Move Enter: Select +/-PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

CPU Internal Cache/External Cache

These two categories speed up memory access. However, it depends on CPU/chipset design.

Enabled	Enable cache
Disabled	Disable cache

CPU L2 Cache ECC Checking

This item allows you to enable/disable CPU L2 Cache ECC checking.

The choice: Enabled, Disabled.

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled	Enable quick POST
Disabled	Normal POST

First/Second/Third/Other Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choice: Floppy, LS/ZIP, HDD, SCSI, CDROM, Disabled.

Swap Floppy Drive

If the system has two floppy drives, you can swap the logical drive name assignments.

The choice: Enabled/Disabled.

Boot Up Floppy Seek

Seeks disk drives during boot up. Disabling speeds boot up.

The choice: Enabled/Disabled.

**Boot Up
NumLock Status**

Select power on state for NumLock.

The choice: Enabled/Disabled.

Gate A20 Option

Select if chipset or keyboard controller should control GateA20.

Normal	A pin in the keyboard controller controls GateA20
Fast	Lets chipset control GateA20

**Typematic Rate
Setting**

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

The choice: Enabled/Disabled.

**Typematic Rate
(Chars/Sec)**

Sets the number of times a second to repeat a key stroke when you hold the key down.

The choice: 6, 8, 10, 12, 15, 20, 24, 30.

**Typematic Delay
(Msec)**

Sets the delay time after the key is held down before it begins to repeat the keystroke.

The choice: 250, 500, 750, 1000.

Security Option

Select whether the password is required every time the system boots or only when you enter setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

**OS Select For
DRAM > 64MB**

Select the operating system that is running with greater than 64MB of RAM on the system.

The choice: Non-OS2, OS2.

**Report No FDD
For Win 95**

Whether report no FDD for Win 95 or not.

The choice: Yes, No.

Advanced Chipset Features/Integrated Peripherals

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Advanced Chipset Features

		Item Help
SDRAM CAS Latency Time	3	
SDRAM Cycle Time Tras/Trc	5/7	
SDRAM Address Setup Time	1	Menu Level >
SDRAM RAS-to-CAS Delay	3	
SDRAM RAS Precharge Time	3	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Enabled	
Delay Transaction	Disabled	
On-Chip Video Window Size	64MB	
* Onboard Display Cache Setting *		
CAS# Latency	3	
Paging Mode Control	Fast	
RAS-to-CAS Override	Fast	
RAS# Timing	Fast	
RAS# Precharge Timing	Fast	
↑↓←→Move Enter: Select +/-PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

DRAM Settings

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

SDRAM CAS Latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

The Choice: 2, 3

SDRAM Cycle Time Tras/Trc	Select the number of SCLKs for an access cycle. The Choice: 5/7, 6/8.
SDRAM Address Setup Time	This item controls the Address Setup to the SDRAM timing. The Choice: 1, 2.
SDRAM RAS-to-CAS Delay	This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. <i>Fast</i> gives faster performance; and <i>Slow</i> gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The Choice: 2, 3.
SDRAM RAS Precharge Time	If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. <i>Fast</i> gives faster performance; and <i>Slow</i> gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The Choice: 2, 3.
System BIOS Cacheable	Selecting <i>Enabled</i> allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The choice: Enabled, Disabled.
Video BIOS Cacheable	Select Enabled allows caching of the video BIOS , resulting in better system performance. However, if any program writes to this memory area, a system error may result. The Choice: Enabled, Disabled.
Memory Hole At 15M-16M	You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements. The Choice: Enabled, Disabled.
Delay Transaction	The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select <i>Enabled</i> to support compliance with PCI specification version 2.1. The Choice: Enabled, Disabled.
On-Chip Video Window Size	Select the on-chip video window size for VGA drive use.

The Choice: 32MB, 64MB, Disabled.

Onboard Display Cache Setting

Setting the onboard display cache timing.

CAS # Latency

Select the local memory clock periods.

The Choice: 2, 3

Paging Mode Control

Select the paging mode control.

The Choice: Fast, Slow.

RAS-to-CAS Override

Select the display cache clock periods control.

The Choice: Fast, Slow.

RAS# Timing

This item controls RAS# active to Protegra, and refresh to RAS# active delay (in local memory clocks).

The Choice: Fast, Slow.

RAS# Precharge Timing

This item controls RAS# precharge (in local memory clocks).

The choice: Fast, Slow.

Integrated Peripherals

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Integrated Peripherals

OnChip Primary	PCI IDE	Enabled		Item Help
OnChip Secondary	PCI IDE	Enabled		
IDE Primary Master	PIO		Auto	Menu Level
IDE Primary Slave	PIO		Auto	
IDE Secondary Master	PIO	Auto		If your IDE hard drive supports
IDE Secondary Slave	PIO	Auto		block mode select Enabled for
IDE Primary Master	UDMA		Auto	automatic detection of the optimal
IDE Primary Slave	UDMA		Auto	number of block read/write per
IDE Secondary Master	UDMA	Auto		sector the drive can support
IDE Secondary Slave	UDMA	Auto		
USB Controller			Enabled	
USB Keyboard Support			Enabled	
Init Display First			PCI Slot	
AC97 Audio				
			Enabled	
AC97 Modem				
			Enabled	
IDE HDD Block Mode			Enabled	
Onboard FDC Controller			Enabled	
Onboard Serial Port 1			3F8 / IRQ4	
Onboard Serial Port 2			2F8 / IRQ3	
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults				

OnChip Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately.

The choice: Enabled, Disabled.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Primary/Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

The Choice: Auto, Disabled.

USB Controller

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

The choice: Enabled, Disabled.

USB Keyboard Support

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

The choice: Enabled, Disabled.

Init Display First

This item allows you to decide to active whether PCI Slot or on-chip VGA first

The choice: PCI Slot, Onboard .

AC97 Audio/Modem

This item allows you to decide to enable/disable the 810 chipset family to support AC97 Audio/Modem.

The choice: Enabled, Disabled.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

The choice: Enabled, Disabled

Onboard FDC Controller

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field.

The choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and second serial ports.

The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use.

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Power Management Setup

ACPI function	Enabled	Item Help
Power Management	User Define	
Video Off Method	V/H	Menu Level >
SYNC_Blank		
Video Off In Suspend	Suspend ->	
Off		
Suspend Type	Stop Grant	
MODEM Use IRQ	3	
Soft-Off by PWRBTN	Delay 4 Sec	
CPU THRM-Throttling	25.0%	
** Reload Global Timer Events **		
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD, COM, LPT Port	Disabled	
PCI IRQ [A-D]#	Disabled	
↑↓←→Move Enter: Select +/-PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).

The choice: Enabled, Disabled.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down
2. Doze Mode
3. Suspend Mode

There are four selections for Power Management, three of which have fixed mode settings.

Disable (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- ONLY AVAILABLE FOR SL CPU's . Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.

User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.
--------------	---

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

Video Off In Suspend

This determines the manner in which the monitor is blanked.

The choice: Yes, No.

Suspend Type

Select the Suspend Type.

The choice: PWRON Suspend, Stop Grant.

MODEM Use IRQ

This determines the IRQ in which the MODEM can use.

The choice: 3, 4, 5, 7, 9, 10, 11, NA.

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

The choice: Enabled, Disabled.

HDD Power Down

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

The choice: Enabled, Disabled.

Soft-Off by PWRBTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has “hung.”

The choice: Delay 4 Sec, Instant-Off.

**CPU THRM-
Throttling**

Select the CPU THRM-Throttling rate.

The choice: 25.0%, 37.5%, 50.0%, 62.5%, 75.0%, 87.5%.

PM Events

PM events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as *Enabled* , even when the system is in a power down mode.

Primary IDE 0

Primary IDE 1

Secondary IDE 0

Secondary IDE 1

FDD, COM, LPT Port

PCI PIRQ[A-D] #

IRQ Resources	When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.
IRQ3/4/5/7/9/10/ 11/12/14/15 assigned to	<p>This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.</p> <p>The Choice: <i>Legacy ISA</i> and <i>PCI/ISA PnP</i>.</p>
DMA Resources	When resources are controlled manually, assign each system DMA channel a type, depending on the type of device using the DM channel.
DMA 0/1/3/5/6/7 assigned to	<p>Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.</p> <p>Choices are <i>Legacy ISA</i> and <i>PCI/ISA PnP</i>.</p>
Memory Resources	This sub menu can let you control the memory resource.
Reserved Memory Base	<p>Reserved a low memory for the legacy device(non-PnP device).</p> <p>Choices are C800, CC00, D000, D800, DC00, D400, N/A.</p>
Reserved Memory Length	<p>Reserved a low memory length for the legacy device(non-PnP device).</p> <p>Choices are 8K, 16K, 32K, 64K.</p>
PCI/VGA Palette Snoop	<p>Leave this field at <i>Disabled</i>.</p> <p>Choices are Enabled, Disabled.</p>

Defaults Menu

Selecting “Defaults” from the main menu shows you two options which are described below

Load Fail-Safe Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? **N**

Pressing ‘Y’ loads the BIOS default values for the most stable, minimal-performance system operations.

Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? **N**

Pressing ‘Y’ loads the default values that are factory settings for optimal performance system operations.

Supervisor/User Password Setting

You can set either supervisor or user password, or both of them. The differences between are:

supervisor password : can enter and change the options of the setup menus.

user password : just 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.

ENTER PASSWORD:

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

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 3). If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

Exit Selecting

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? **Y**

Pressing “Y” stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? **Y**

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

CHAPTER 4 SOFTWARE UTILITIES

INTEL 810 Drivers -- Quick Installation Procedures For Windows 95 OSR2, Windows 98 and Windows 98 SE

For Windows 95 OSR2 (English Version)

(D:\ stands for CD-ROM drive)

1. Install Windows 95 OSR2.
2. Insert Driver CD to CD-ROM drive.
3. Update your Windows 95 OSR 2 to version OSR 2.1. Run
“D:\OSR2.1\ENGLISH\USBSUPP.EXE”.
4. After updating to OSR 2.1, reboot your system.
5. Install “810 INF” driver. Run “D:\INTEL810\INF\SETUP.EXE”.
6. After installation, reboot your system.
7. Install “810 Graphics” driver. Run
“D:\INTEL810\GRAPHICS\WIN95\SETUP.EXE”.
8. After installation, reboot your system.
9. Install DirectX 6.0. Run “D:\DIRECTX6\WIN95\DX6ENG.EXE”.
10. After installation, reboot your system.
11. Install “810 Sound” driver (version: 4.06.0531). Run
“D:\INTEL810\SOUND\WIN95\DRV\SETUP.EXE”.
12. After installation, reboot your system.
13. Install “810 MIDI” driver. Run
“D:\INTEL810\SOUND\WIN95\MIDI\SETUP.EXE”.
14. After installation, reboot your system.
15. Test MIDI function
 - a) Click icon “My Computer”, “Control Panel”, “Multimedia”, “MIDI”. Select
“3ComEuSynth” as MIDI output. Click “OK”.
 - b) Click “Start”, “Programs”, “Accessories”, “Multimedia” and “Media Player”.
Test WAV and MIDI play function.

For Windows 98 (English Version)

(D:\ stands for CD-ROM drive)

1. Install Windows 98.
2. Insert Driver CD to CD-ROM drive.
3. Install “810 INF” driver. Run “D:\INTEL810\INF\SETUP.EXE”.
 - During installation, you will be prompted for the below files. Please insert Windows 98 CD-ROM to CD-ROM drive if necessary.
 - ISAPNP.VXD --- in Windows 98 CD-ROM
 - ICHXIDE.DAT --- in C:\Windows\Catroot
 - USBHUB.SYS --- in Windows 98 CD-ROM
4. After installation, reboot your system.
5. Install “810 Graphics” driver. Run “D:\INTEL810\GRAPHICS\WIN98\SETUP.EXE”.
6. After installation, reboot your system.
7. Install DirectX 6.0. (Windows 98 do not include DirectX driver, so you have to install DirectX 6.0) Run “D:\DIRECTX6\WIN98\DX6CORE.EXE”.
8. After installation, reboot your system.
9. Install “810 Sound” driver (version: 4.06.0531). Run “D:\INTEL810\SOUND\WIN98\DRV\SETUP.EXE”.
10. After installation, reboot your system.
11. Install “810 MIDI” driver. Run “D:\INTEL810\SOUND\WIN98\MIDI\SETUP.EXE”.
12. After installation, reboot your system.
13. Test MIDI function
 - a) Click icon “My Computer”, “Control Panel”, “Multimedia”, “MIDI”. Select “3ComEuSynth” as MIDI output. Click “OK”.
 - b) Click “Start”, “Programs”, “Accessories”, “Multimedia” and “Media Player”. Test WAV and MIDI play function.

For Windows 98 SE (Second Edition - English)

(D:\ stands for CD-ROM drive)

1. Install Windows 98 SE.
2. Insert Driver CD to CD-ROM drive.
3. Install “810 INF” driver. Run “D:\INTEL810\INF\SETUP.EXE”.
4. After installation, reboot your system.
5. Install “810 Graphics” driver. Run “D:\INTEL810\GRAPHICS\WIN98\SETUP.EXE”.
6. After installation, reboot your system.
7. No need to install DirectX 6.0 because Win 98 SE already included DirectX 6.1.
8. Install “810 Sound” driver. Run “D:\INTEL810\SOUND\WIN98SE\SETUP.EXE”.
9. After installation, reboot your system.
10. After successful boot up, please reboot your system once again.
11. Test MIDI function.
 - Click icon “My Computer”, “Control Panel”, “Multimedia”, “MIDI”. Select “MSGWAVETABLE” as MIDI output. Click “OK”.
 - Click “Start”, “Programs”, “Accessories”, “Multimedia” and “Media Player”. Test WAV and MIDI play function.

Remarks:

Windows 98 SE supports two ways of CD Audio signal input.

1. **Use CD Audio cable to connect CD-ROM drive with sound device.**
2. **Digital CD Audio signal will be transferred through harddisk cable. In this case, there is no need to use CD Audio cable.**

And in the volume control menu:

“CD Audio” stands for volume control of CD Audio cable signal input.

“CD Player” stands for volume control of Digital CD Audio signal input through harddisk cable.

BIOS Update

Please download the latest BIOS and drivers from:

www.pinegroup.com

4.7 Hardware Doctor PC Self-Diagnostic System

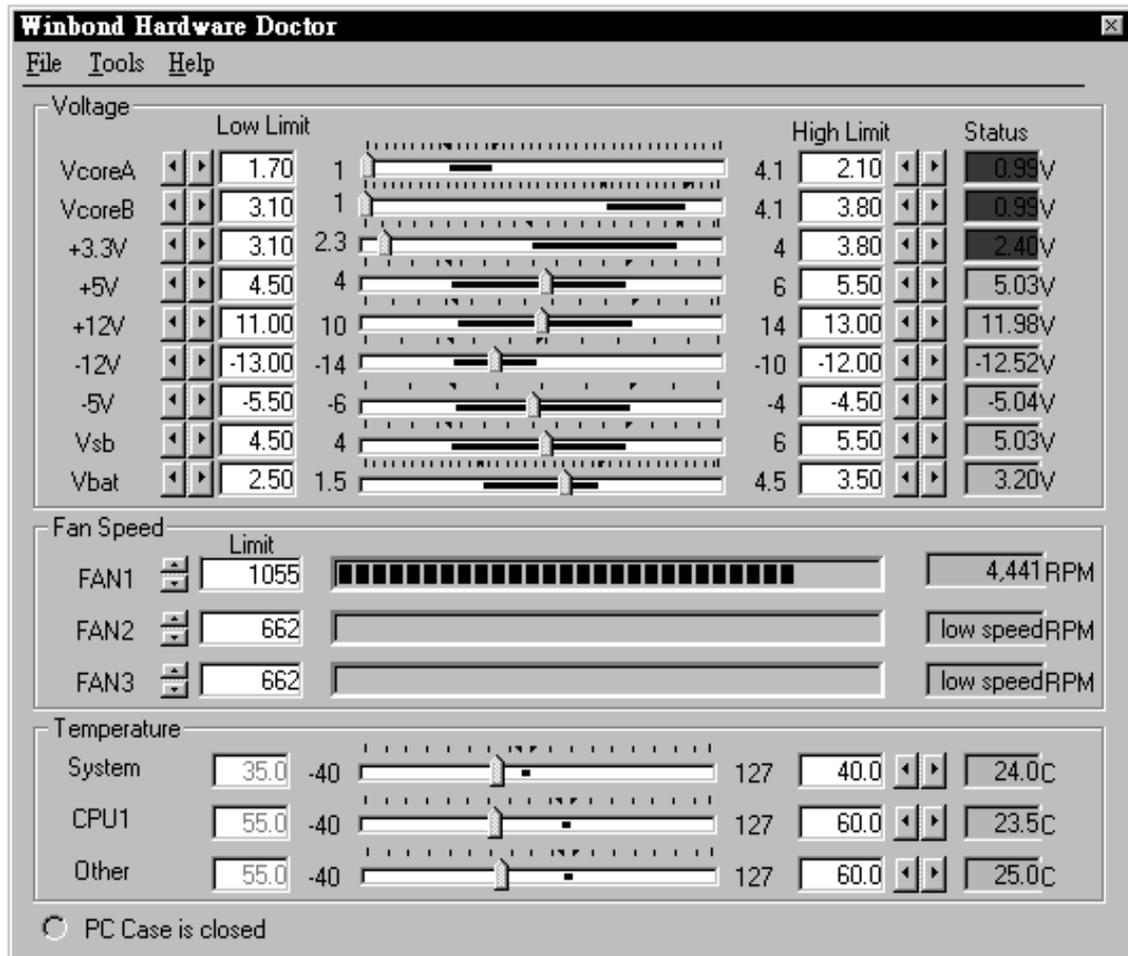
Hardware Doctor is a self-diagnostic system for PC and must be used with W83781D IC series products.

It will protect PC Hardware by monitoring several critical items including Power Supply Voltage, CPU & System Fans speed (option), and CPU & System temperature (option).

These items are important to the operation of system; errors may result in permanent hurt of PC. Once any item is out of its normal range, an obvious warning message will pop up and remind user to make a proper treatment.

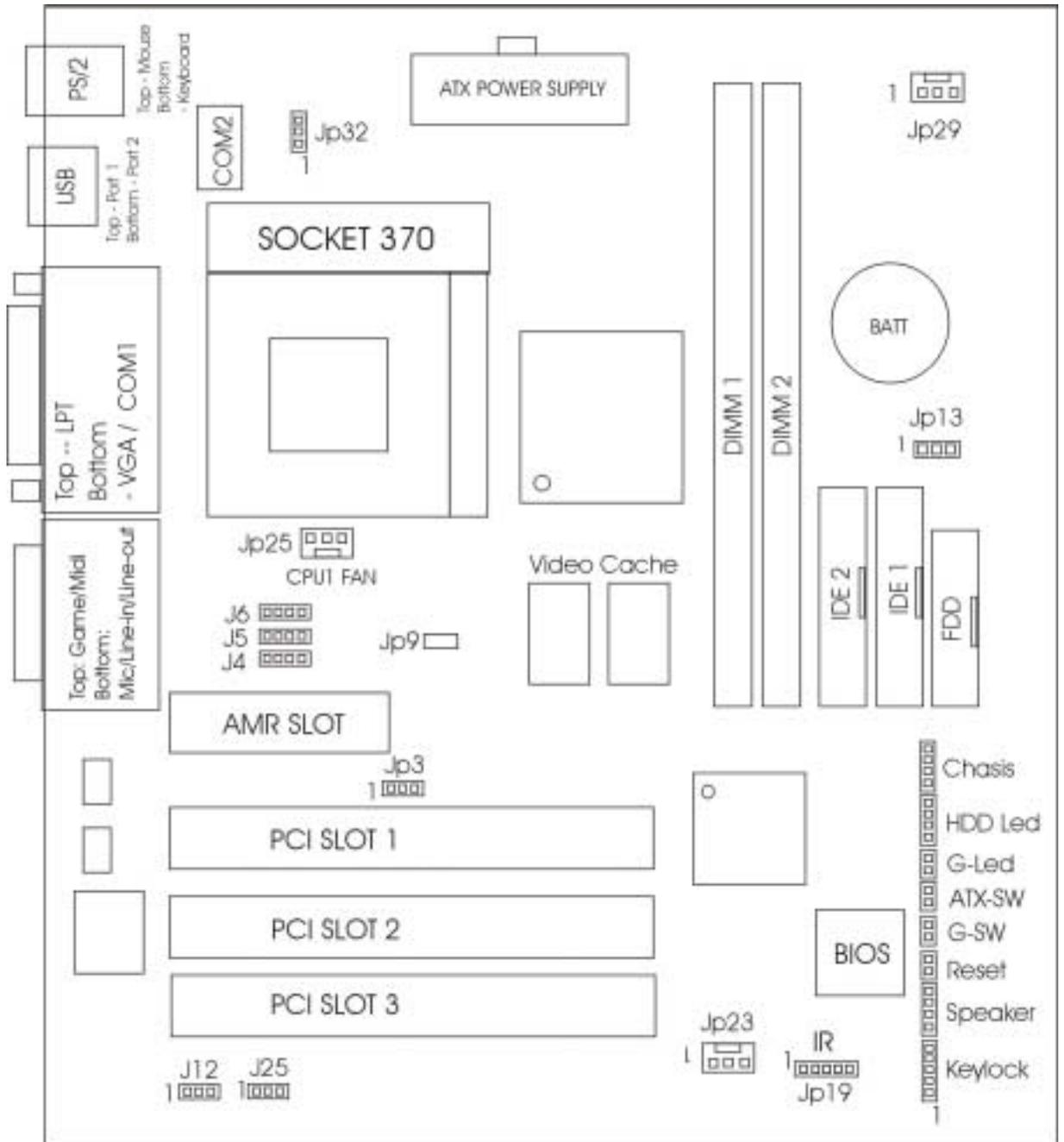
Choose any item for more information in following graphic:

Choose any item for more information in following graphic:



ADDENDUM

Intel 810 / 810E Series Chipset Socket 370 MATX Mainboard



Connector and Jumper Setting

Keyboard Power On Setting – JP32	
Pin 1-2 Close	Normal
Pin 2-3 Close	Power on by keyboard wake up

CPU Over Clock Setting – JP9	
Close	66 or 100 Mhz
Open	100 Mhz

CMOS Setting – JP13	
Pin 1-2 Close	Normal
Pin 2-3 Close	Discharge CMOS Data

Fan Connector	
JP25	CPU1 Fan Connector
JP29	CPU2 Fan Connector
JP23	Extra Fan Connector

AMR Slot State Setting – JP3	
Pin 1-2 Close	AMR set to primary state
Pin 2-3 Close	AMR set to secondary state (Factory Default)

CD Audio Connector	
J4 or J5 or J6	CD audio connector

Other Connector	
J12	Wake Up On Modem
J25	Wake Up On LAN
JP19	IrDA connector

Case Connector	
Keylock	Keylock / Power LED Connector
Speaker	Speaker Connector
Reset	Reset Switch Connector
G-SW	ACPI Suspend Switch Connector
ATX-SW	ATX Power On Switch Connector
G-LED	ACPI Suspend LED Connector
HDD LED	Hard Disk Active LED Connector
Chasis	Chasis Open / Close Detector