

# ***M7TDE***

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## **Federal Communications Commission (F.C.C.) Statement**

This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Accessories: This device has been tested and found to comply with the limits of a Class B digital device; the accessories associated with this equipment are as follows:

1. Shielded serial cable. (Can be obtained from multiple retail outlets)
2. Shielded printer cable. (Can be obtained from multiple retail outlets)
3. Shielded video cable. (Can be obtained from multiple retail outlets)
4. Shielded power cord. (Provided by manufacturer)

These accessories are required to ensure compliance with FCC Rules. It is the responsibility of the user to provide and use these accessories properly.

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant of Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and radiates radio frequency energy and, if you did not installed and used in accordance with the instructions, may cause harmful interference in the radio communications. There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

1. Reorient / relocate the receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Connect the equipment into an outlet from a circuit where the receiver is connect.
4. Consult the dealer or an experienced radio/TV technician for help.

Caution: Changes or modifications that is not expressly approved by the manufacturer could void the user's authority to operate the equipment.

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This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus to set out of the radio interference regulations of the Canadian Department of Communications.

Cet appareil numérique n'émet pas de bruits radioélectriques dépassant les limites appliquées aux appareils numériques de Class B prescrits dans le règlement du brouillage radioélectrique edict par le minister Des Communications du Canada.

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## **Introduction**

### **System Overview**

Congratulations on the purchase of your new system! This motherboard is designed to take advantage of the latest industry technology to provide you with the ultimate solution in data processing. In the tradition of its predecessors, this motherboard continues the commitment of reliability, performance and strives for full compliance and compatibility with industry software and hardware standards.

### **M7TDE Highlights:**

- ▶ Contains on board I/O facilities, which include two serial ports, a parallel port, a PS/2 mouse port, a PS/2 keyboard port, audio ports, USB ports, a LAN port (optional) and a game port.
- ▶ Contains on board IDE facilities for IDE devices such as hard disks and CD-ROM Drives.
- ▶ Supports the Intel Pentium 4<sup>®</sup> (Socket 478) processor, a leading edge processor which brings to you the latest technology in micro architecture design, graphics performance, system bus design, cache architecture and much more.
- ▶ Complies with PC Micro ATX form factor specifications.
- ▶ Supports popular operating systems such as Windows 95/98, Windows NT, Windows 2000, Windows ME, Windows XP, LINUX and SCO UNIX.

# 1. Motherboard Description

## 1.1 Features

### 1.1.1 Hardware

#### CPU

- Single Socket-478 for an Intel Pentium<sup>®</sup> 4 processor.
- Supports the Intel Pentium<sup>®</sup> 4 processor subset of the Enhanced Mode Scalable Bus Protocol.
- Intel Pentium<sup>®</sup> 4 System Bus interrupt delivery.
- Supports system bus Dynamic Bus Inversion (DBI).
- Supports 32-bit system bus addressing.

#### Speed

- Running at 400 MHz Front Side Bus frequency.
- Supports up to 2 GHz CPU core speeds.
- The 33MHz 32 bit PCI 2.2 compliant.
- The 66MHz AGP 2.0 compliant interface supports 1x, 2x and 4x data transfer mode. (Supports only 1.5v AGP electricals.)

#### Chipset

- Intel 82845/82801BA.
- Winbond W83627HF.

**DRAM Memory**

- Supports 200MHz or 266MHz DDR SDRAM devices.
- Supports 128MB, 256MB, 512MB/ 1GB technologies for x8 and 16 devices.
- Supports one DDR-SDRAM channel, 64 wide (72b with ECC).
- No support for DSx16 DIMMs.

**Shadow RAM**

- Motherboard is equipped with a memory controller providing shadow RAM and support for ROM BIOS.

**Green Functionality**

- Supports Award BIOS™ power management functionality.
- Has a power down timer from 1 to 15 minutes.
- Wakes from power saving sleep mode with any keyboard or mouse activity.

**BUS Slots**

- One AGP slot.
- One CNR slot (Support Type A CNR only).
- Three 32-bit PCI bus slots.

**Flash Memory**

- Supports flash memory functionality.
- Supports ESCD functionality.



**Built in IDE Facilities**

- Supports four IDE hard disk drives.
- Supports PIO Mode 4, Master Mode, and high performance hard disk drives.
- Supports disk transfer rates up to 100 MB/second.
- Supports Ultra DMA 33, Ultra DMA 66, Ultra DMA 100 Bus Master Modes.
- Supports IDE interface with CD-ROM.
- Supports high capacity hard disk drives.
- Supports LBA mode.

**AC'97 Sound Codec Onboard**

- AC-LINK protocol compliance.
- AC'97 2.2compliant.
- Energy saving power down modes.
- 18-bit full duplex stereo ADC,DACs.

**Universal Serial Bus**

- Supports two back panel Universal Serial Bus Ports and two front panel Universal Serial Bus Ports (optional).
- Supports 48 MHz USB.

**BIOS Hardware Monitor Function**

- Monitors CPU Fan Speed.
- Monitors System Voltage.
- Monitors System Fan Speed.

**Super I/O Built-in onboard**

- Support one multi-mode Parallel Port.
  - (1) Standard & Bidirection Parallel Port (SPP).
  - (2) Enhanced Parallel Port (EPP).
  - (3) Extended Capabilities Port (ECP).
- Supports two serial ports, 16550 UART with 16 byte FIFO.
- UART data rates up to 1.5 Mbaud.
- Supports one Infrared transmission (IR) port.
- Supports PS/2 Mouse /Keyboard.
- Supports 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB floppy disk drives.

**Accelerated Graphics Port (AGP) Interface**

- Supports a single AGP device (either a connector or on the motherboard).
- Supports AGP 2.0 including 4X AGP data transfers and 2x/4x Fast Write protocol.
- Supports only 1.5v AGP electricals.
- High priority access support.
- Hierarchical PCI configuration mechanism.

**Dimensions (Micro ATX form-factor)**

- 22.1cm x 24.4cm (WxL).

**LAN (Optional)**

- 10 Mb/s and 100 Mb/s operation.
- Supports 10/100 Mb/s N-way Auto-negotiation operation
- Supports Wake-On-LAN function and remote wake-up.
- Supports Full Duplex Flow Control (IEEE 802.3X)

### **1.1.2 BIOS**

- AWARD legal BIOS.
- Supports APM1.2.
- Supports USB Function.
- Supports ACPI.

### **1.1.3 Software**

#### **Operating System**

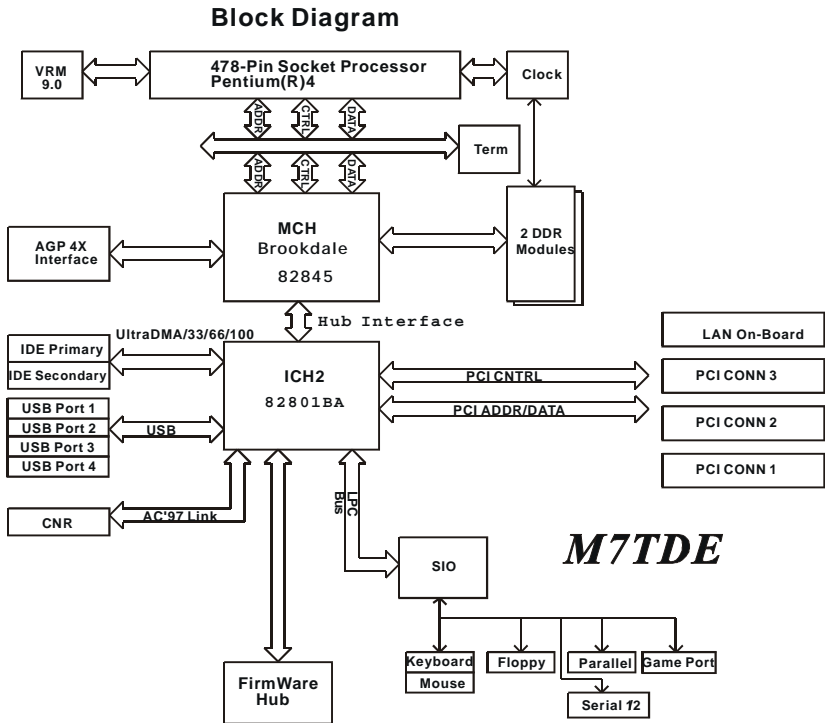
- Offers the highest performance for MS-DOS, Windows NT, Windows 2000, Windows 95/98, Windows ME, Windows XP, LINUX, SCO UNIX etc.

### **1.1.4 Accessories**

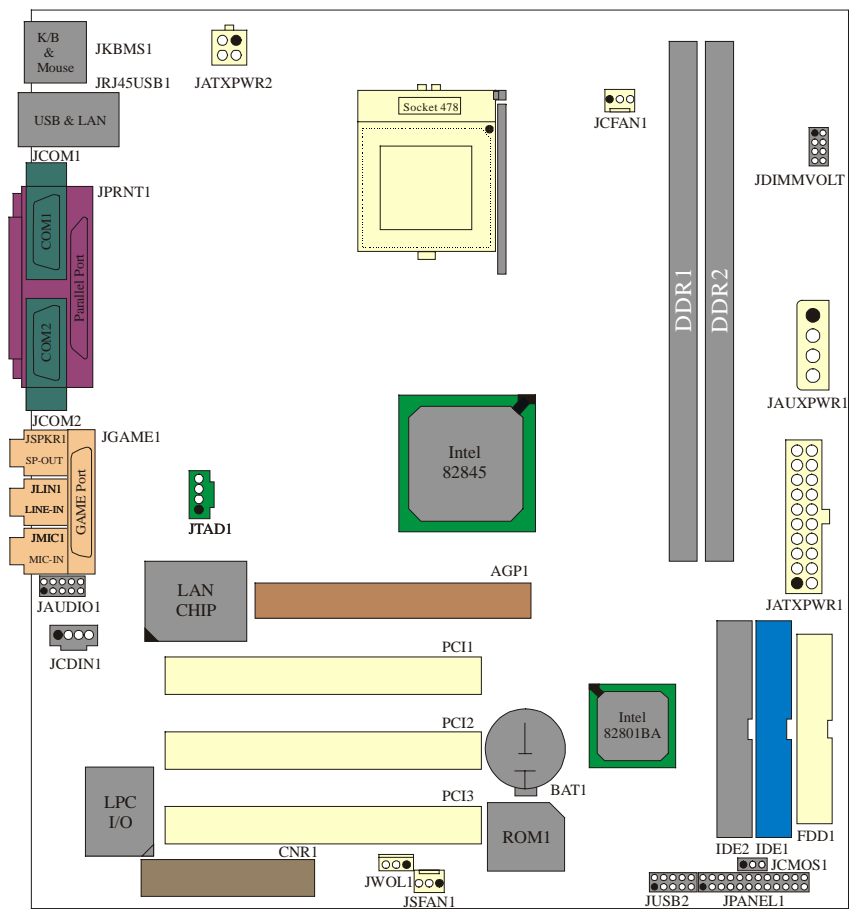
- HDD Cable.
- FDD Cable.
- Flash Memory Writer for BIOS Update.
- USB Cable (Optional).
- Rear I/O Panel for ATX Case (Optional).
- Fully Setup Driver CD.

# 1.2 Motherboard Installation

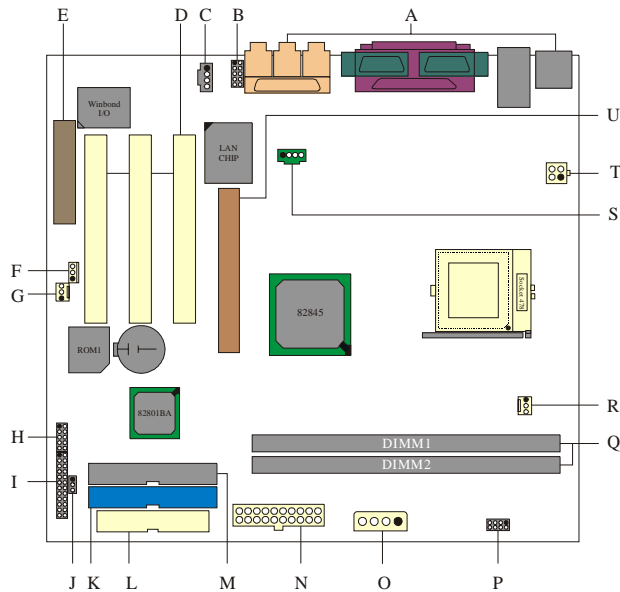
## 1.2.1 System Block Diagram



### 1.2.2 Layout of Motherboard Model No.M7TDE



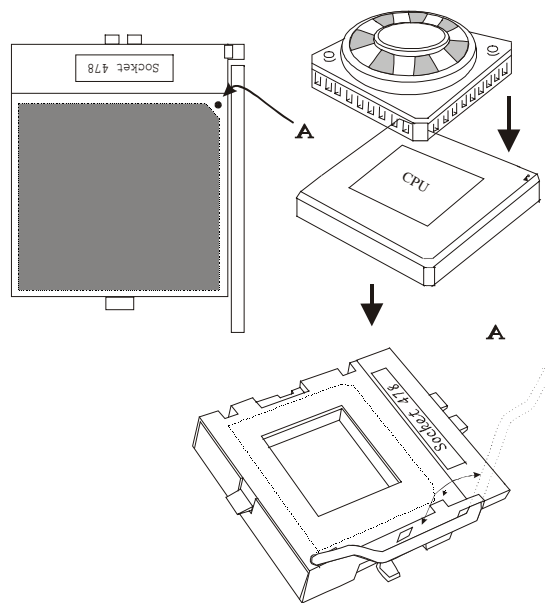
## 1.2.3 Quick Reference



- |   |   |
|---|---|
| <b>A. Back Panel I/O Connectors</b>             | <b>M. Secondary IDE Connector (IDE2)</b>            |
| <b>B. Front Audio Header (JAUDIO1)</b>          | <b>N. ATX Power Connector (JATXPWR1)</b>            |
| <b>C. CD-ROM Audio Header (JCDIN1)</b>          | <b>O. Auxiliary Power Connector (JAUXPWR1)</b>      |
| <b>D. PCI BUS Slots (PC11-3)</b>                | <b>P. DIMM Voltage Selection Header (JDIMMVOLT)</b> |
| <b>E. CNR Slot (CNR1)</b>                       | <b>Q. DDR Dimms (DDR1/2)</b>                        |
| <b>F. Wake-On-LAN Header (JWOL1)</b>            | <b>R. CPU FAN Header (JCFAN1)</b>                   |
| <b>G. System FAN Header (JSFAN1) (Optional)</b> | <b>S. Telephony Audio (JTAD1)(Optional)</b>         |
| <b>H. Front USB Header (JUSB2)</b>              | <b>T. ATX 12V Power Connector (JATXPWR2)</b>        |
| <b>I. Front Panel Connector (JPANEL1)</b>       | <b>U. AGP Slot (AGP1)</b>                           |
| <b>J. Clear CMOS Header (JCMOS1)</b>            |   |
| <b>K. Primary IDE Connector (IDE1)</b>          |   |
| <b>L. Floppy Disk Connector (FDD1)</b>          |   |

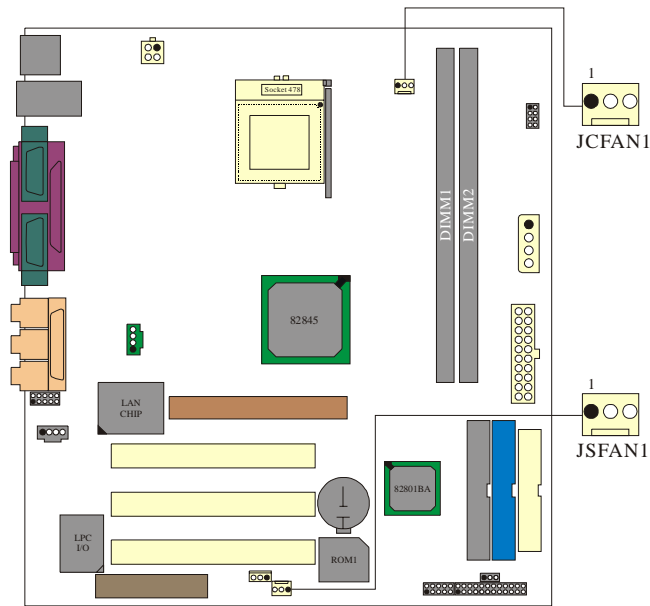
## 1.3 CPU Installation

### 1.3.1 CPU Installation Procedure: Socket 478



1. Pull the lever sideways away from the socket then raise the lever up to 90-degree angle.
2. Locate Pin A in the socket and look for the white dot or cut edge in the CPU. Match Pin A with the white dot/cut edge then insert the CPU.
3. Press the lever down.
4. Put the fan on the CPU by buckling it and then put the fan's power-port into the JCFAN1, then the installation will be completed.

**CPU Installation Layout**



**1.3.2 CPU Fan Header: JCFAN1**

Pin No.	Assignment
1	Ground
2	+12V
3	Sense

**1.3.3 System Fan Header: JSFAN1 (Optional)**

Pin No.	Assignment
1	Ground
2	+12V
3	Sense



## 1.4 RAM Module Installation

### 1.4.1 DIMM

DRAM Access Time: 2.5V Unbuffered/ Registered DDR SDRAM PC 200/266 Type required.

DRAM Type: 64MB/ 128MB/ 256MB/ 512MB/ 1GB DIMM Module (184 pin)

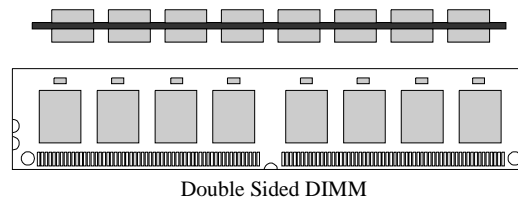
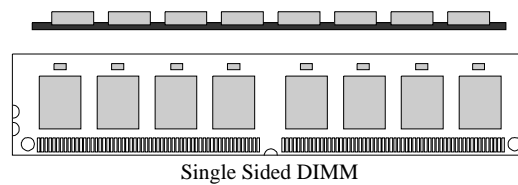
#### Total Memory Sizes With Unbuffered DIMMs

Total Memory Size (MB)	1 DIMM	2 DIMMs
64 M	64 M	----
128 M	128 M	----
256 M	256 M	----
512 M	512 M	----
1 G	1 G	
128 M	64 M	64 M
192 M	128 M	64 M
320 M	256 M	64 M
576 M	512 M	64 M
1.064 G	1 G	64 M
192 M	64 M	128 M
256 M	128 M	128 M
384 M	256 M	128 M
640 M	512 M	128 M
1.128 G	1 G	128 M
320 M	64 M	256 M
384 M	128 M	256 M
512 M	256 M	256 M
768 M	512 M	256 M
1.256 G	1 G	256 M

<b>Total Memory Size (MB)</b>	<b>1 DIMM</b>	<b>2 DIMMs</b>
576 M	64 M	512 M
640 M	128 M	512 M
768 M	256 M	512 M
1024 M	512 M	512 M
1.512 G	1 G	512 M
1.064 G	64 M	1 G
1.128 G	128 M	1 G
1.256 G	256 M	1 G
1.512 G	512 M	1 G
2 G	1 G	1 G

\* The list shown above for DRAM configuration is only for reference.

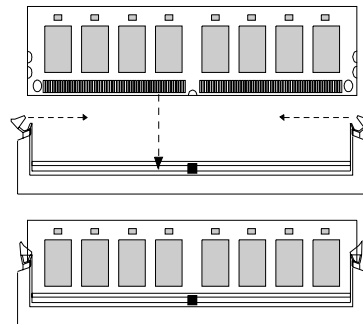
### 1.4.2 How to install a DIMM Module



1. The DIMM socket has a “Plastic Safety Tab”, and the DIMM memory module has an “Asymmetrical notch”, so the DIMM memory module can only fit into the slot in one direction.

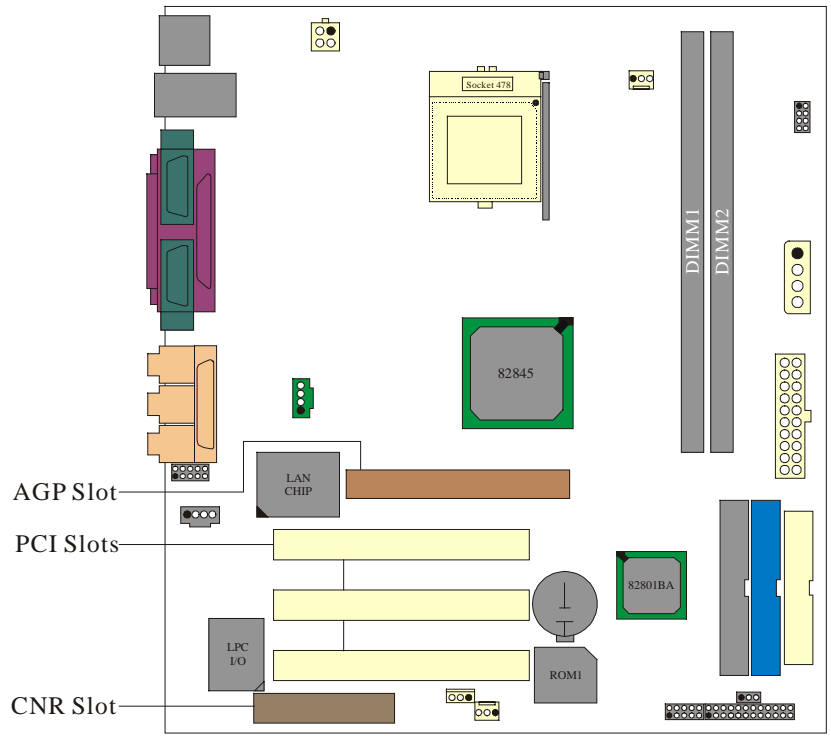
2. Push the tabs out. Insert the DIMM memory modules into the socket at a 90-degree angle, then push down vertically so that it will fit into the place.

3. The Mounting Holes and plastic tabs should fit over the edge and hold the DIMM memory modules in place.



### 1.5 Slots

The slots in this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



**1.5.1 AGP (Accelerated Graphics Port) Slot**

Unlike the mouse ports, keyboard ports and printer ports, this motherboard does not have built in video facilities and therefore requires a video card for one of the expansion slots. Your monitor will attach directly to that video card. This motherboard supports video cards for PCI slots, but it is also equipped with an Accelerated Graphics Port (AGP). An AGP card will take advantage of AGP technology for improved video efficiency and performance, especially with 3D graphics.

**1.5.2 CNR (Communication Network Riser) Slot**

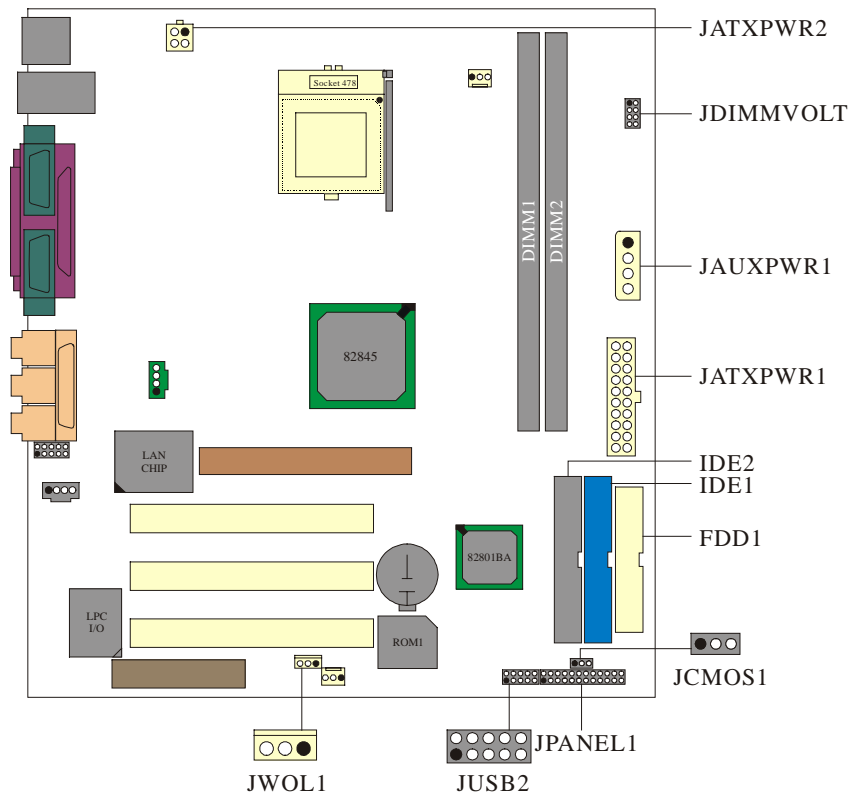
The CNR specification is an open Industry Standard Architecture, and it defines a hardware scalable riser card interface, which supports audio, network and modem only.

**1.5.3 PCI (Peripheral Component Interconnect) Slots**

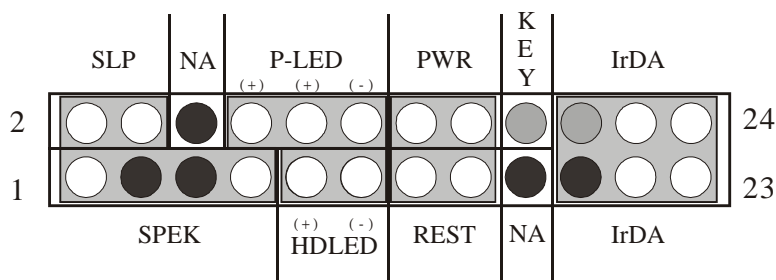
This motherboard is equipped with 3 standard PCI slots. PCI stands for Peripheral Component Interconnect, and it is a bus standard for expansion cards, which has supplanted the older ISA bus standard in most ports. This PCI slot is designated as 32 bits.

## 1.6 Connectors, Headers & Jumpers

The connectors, headers and jumpers introduced below provide you lots of capabilities such as power supply, front panel signal revelation, IDE hard disk connection, floppy disk connection, Wake On LAN function and Front USB connection. Noticeably, a jumper has two or more pins covered by a plastic jumper cap, allowing you to select a different system options.



## 1.6.1 Front Panel Connector: JPANEL1



Pin No.	Assignment	Function	Pin No.	Assignment	Function
1	Speaker	Speaker Connector	2	Sleep Control	Sleep Button
3	NC		4	Ground	Button
5	Ground		6	NA	
7	5V		8	Power LED (+)	POWER LED
9	HDD LED (+)	10	Power LED (+)		
11	HDD LED (-)	12	Power LED (-)		
13	Ground	Reset Button	14	Power Button	POWER Button
15	Reset Control		16	Ground	
17	NA		18	KEY	
19	NA	IrDA Connector	20	KEY	IrDA Connector
21	5V		22	Ground	
23	IRTX		24	IRRX	

**Speaker Connector**

An offboard speaker can be installed on the motherboard as a manufacturing option. It can be connected to the motherboard at the front panel connector. The speaker (onboard or offboard) provides error beep code information during the Power On Self-Test when the computer cannot use the video interface. The speaker is not connected to the audio subsystem and does not receive output from the audio subsystem.

**Reset Button**

This connector can be attached to a momentary SPST switch. This switch is usually open, and when it is closed, it will cause the motherboard to reset and run the POST (Power On Self Test).

**Power LED Connector**

This connector can be attached to an LED on the front panel of a computer case. The LED will illuminate while the computer is powered on.

**HDD LED (Hard Drive LED Connector)**

This connector can be attached to an LED on the front panel of a computer case. The LED will flicker during disk activity where it is applied only applies to those IDE drives directly attached to the system board.

**IrDA (Infrared Connector)**

This connector is used to attach to an infrared sensing device. After the IrDA interface is configured, connectionless data transfer to and from portable devices such as laptops making PDAs possible.

**Sleep Button (Green Button)**

This connector is used to conserve energy by powering down the monitor and the hard disk when is not in use. To configure this option, you need to connect a button from the front panel to this sleep button. Depressing the button will power down the monitor and the hard drives until the system is invoked by any keyboard activity, mouse activity, modem activity or when the sleep button is depressed again. APM (Advanced Power Management) must be enabled in the system BIOS, and the APM driver must be loaded.

**Power Button**

This connector can be attached to a front panel power switch. The switch must pulled the Power Button pin to ground for at least 50 ms to signal the power supply to switch on or off. (The time required is due to internal debounce circuitry on the system board). At least two seconds must pass before the power supply will recognize another on/off signal.



### 1.6.2 ATX 20-pin Power Connector: JATXPWR1

This connector supports the power button on-board. Using the ATX power supply, function such as Soft Power Off is supported on this motherboard. This power connector supports instant power-on functionality, which means that the system will boot up instantly when the power connector is inserted on the board.

PIN	Assignment	PIN	Assignment
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	Ground	13	Ground
4	5V	14	PS_ON
5	Ground	15	Ground
6	5V	16	Ground
7	Ground	17	Ground
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

### 1.6.3 ATX 12V Power Connector: JATXPWR2

PIN	Assignment	PIN	Assignment
1	12V	3	Ground
2	12V	4	Ground

### 1.6.4 AUX Power Connector: JAUXPWR1

PIN	Assignment	PIN	Assignment
1	+12V	3	Ground
2	Ground	4	+5V

### 1.6.5 Hard Disk Connectors: IDE1/IDE2

The motherboard has a 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~4, Bus Master, and Ultra DMA / 33, Ultra DMA / 66, Ultra DMA / 100 functionality. It has two HDD connectors IDE1 (primary) and IDE2 (secondary). You can connect up to four hard disk drives, a CD-ROM, a 120MB Floppy (reserved for future BIOS) and other devices to IDE1 and IDE2. These connectors support the IDE hard disk cable provided.

- **IDE1 (Primary IDE Connector)**

The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure the second hard drive on IDE1 to Slave mode by setting the jumper accordingly.

- **IDE2 (Secondary IDE Connector)**

The IDE2 controller can also support a Master and a Slave drive. Its configuration is similar to IDE1. The second drive on this controller must be set to slave mode.

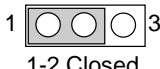
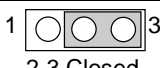
### 1.6.6 Floppy Disk Connector: FDD1

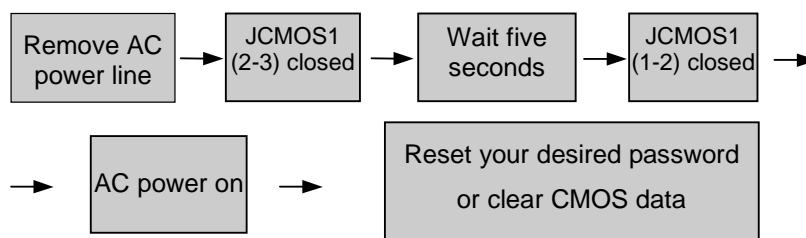
The motherboard provides a standard floppy disk connector (FDC) that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.

### 1.6.7 Wake On LAN Header: JWOL1

Pin No.	Assignment
1	5V SB
2	Ground
3	Wake up

### 1.6.8 Clear CMOS Jumper: JCMOS1

JCMOS1	Assignment
 1-2 Closed	Normal Operation (default)
 2-3 Closed	Clear CMOS Data



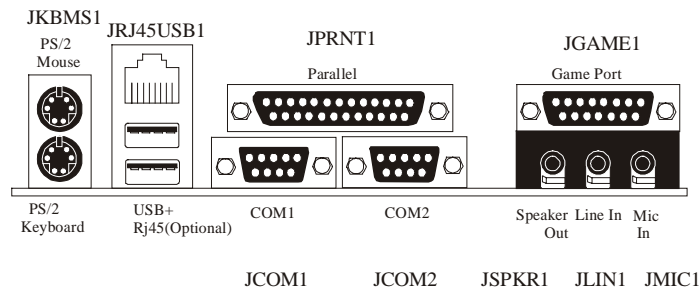
### 1.6.9 Front USB Headers: JUSB2

Pin	Assignment	Pin	Assignment
1	+5V	2	+5V
3	USB1 Data(-)	4	USB2 Data(-)
5	USB1 Data(+)	6	USB2 Data(+)
7	Ground	8	Ground
9	KEY	10	NA

### 1.6.10 DIMM Power Voltage Selection: JDIMMVOLT

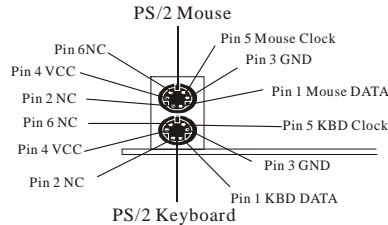
Pin	DDR DIMM Voltage
JUMP OFF	+2.5V(default)
1-2	+2.6V
3-4	+2.75V
5-6	+2.8V
7-8	+2.9V

## 1.7 Peripheral Port



### 1.7.1 PS/2 Mouse / Keyboard Connector: JKBMS1

The motherboard provides a standard PS/2 mouse / Keyboard mini DIN connector for attaching a PS/2 mouse. You can plug a PS/2 mouse / Keyboard directly into this connector. The connector location and pin definition are shown below:

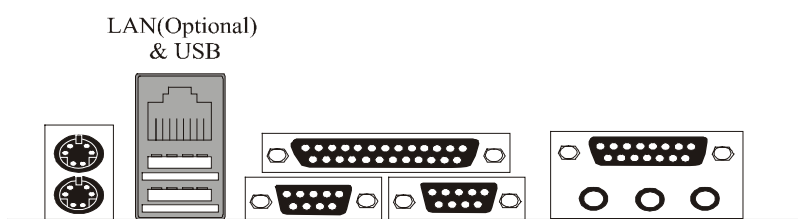


#### PS/2 Mouse / Keyboard Connectors

Pin	Assignment
1	Data
2	No connect
3	Ground
4	5 V (fused)
5	Clock
6	No connect

### 1.7.2 USB & LAN Connector: JRJ45USB1

The motherboard provides an **OHCI (Open Host Controller Interface) Universal Serial Bus Roots** for attaching USB devices such as: keyboard, mouse and other USB devices. You can plug the USB devices directly into this connector.



#### Stacked USB Connectors

Pin	Assignment
1	5 V
2	USBP0- [USBP1-]
3	USBP0+ [USBP1+]
4	Ground

Signal names in brackets ([ ]) are for USB Port 1.

#### Stacked LAN Connector

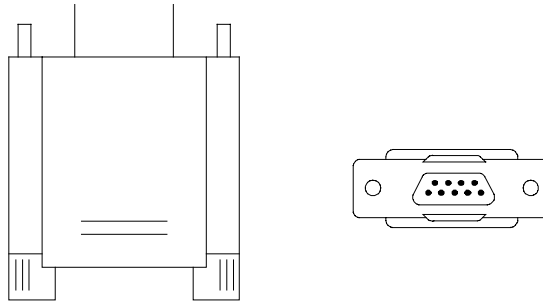
Pin	Assignment	Pin	Assignment
1	TDP	7	NC
2	TDN	8	NC
3	RDP	11	VCC3 SBY
4	NC	12	TX LED
5	NC	13	VCC3 SBY
6	RDN	14	RX LED

### 1.7.3 Serial and Parallel Interface Ports

This system is equipped with two serial ports and one parallel port. Both types of interface ports will be explained in this chapter.

#### 1.7.3.1 The Serial Interface: JCOM1/ JCOM2

The serial interface port is sometimes referred to as an RS-232 port or an asynchronous communication port. Mice, printers, modems and other peripheral devices can be connected to a serial port, where it can also be used to connect your computer with another computer system. If you wish to transfer the contents of your hard disk to another system, it can be accomplished by using each machine's serial port.



The serial port on this system has two 9-pin connectors. Some older computer systems and peripherals used to be equipped with only one 25-pin connector. If you need to connect your 9-pin serial port to an older 25-pin serial port, you can purchase a 9-to-25 pin adapter.

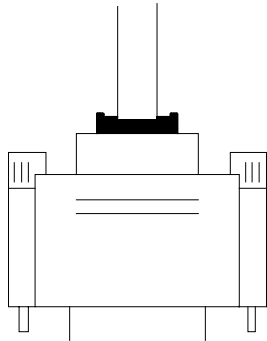
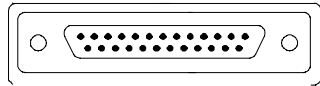
**Connectivity**

The serial ports can be used in many ways, and it may be necessary to become familiar with the pinout diagram. The following chart gives you the function of each pin on the 9-pin connector and some of the 25-pin connector. This information can be used when configuring certain software programs to work with the serial ports.

<b>Signal</b>	<b>Name</b>	<b>DB9 PIN</b>	<b>DB25 PIN</b>
DCD	Data Carrier Detect	1	8
RX	Receive Data	2	3
TX	Transmit Data	3	2
DTR	Data Terminal Ready	4	20
GND	Signal Ground	5	7
DSR	Data Set Ready	6	6
RTS	Request to Send	7	4
CTS	Clear to Send	8	5
RI	Ring Indicator	9	22

### 1.7.3.2 Parallel Interface Port: JPRNT1

Unlike the serial ports, parallel interface port has been standardized, and it should not present any difficulty interfacing peripherals of your system. Sometimes it is called centronics port and the parallel port is almost exclusively used with printers. The parallel port on your system has a 25-pin, DB25 connector (see picture below). The pinout for the parallel port are shown in the table below.

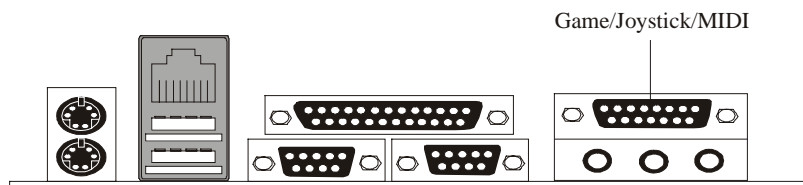


Signal	Pin
-Strobe	1
Data 0	2
Data 1	3
Data 2	4
Data 3	5
Data 4	6
Data 5	7
Data 6	8
Data 7	9
-Ack	10
Busy	11
Paper Empty	12
+Select	13
-Auto FDXT	14
-Error	15
-Init	16
-SLCTN	17
Ground	18
Ground	19
Ground	20
Ground	21
Ground	22
Ground	23
Ground	24
Ground	25



### 1.7.4 Game (Joystick/MIDI) Port Connector: JGAME1

This connector allows you to connect a joystick or game pad for playing computer games. Also, you may play or edit professional music by connecting MIDI devices.

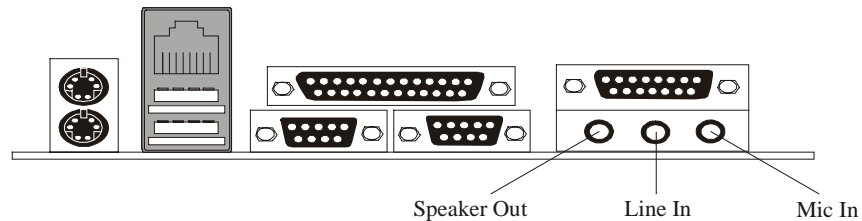


### 1.7.5 Audio Port Connectors: JSPKR1/JLIN1/JMIC1

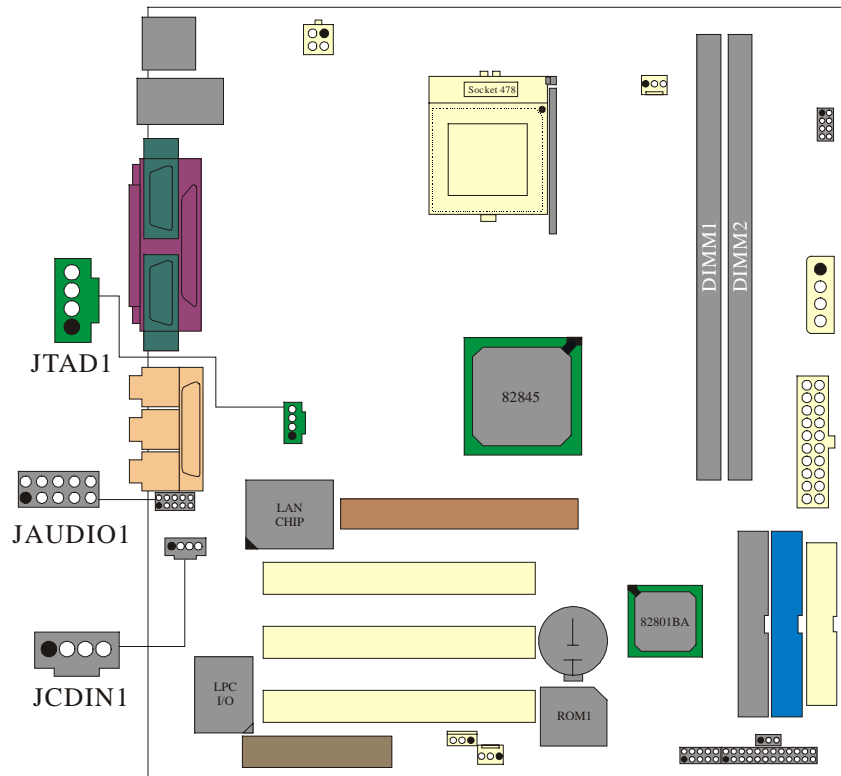
**Speaker Out** is used to connect speakers or headphones for audio output.

**Line In** can be connected to the external CD player, Tape player or other audio devices for audio input.

**Mic In** is used to connect a microphone, which allows you to input sounds and voices.



### 1.7.6 Audio Subsystem



**1.7.6.1 CD-ROM Audio-In Header: JCDIN1**

Pin No.	Assignment
1	Left Channel Input
2	Ground
3	Ground
4	Right Channel Input

**1.7.6.2 Front Audio Header: JAUDIO1**

Pin No.	Assignment	Pin No.	Assignment
1	Mic In	2	Ground
3	Mic Power	4	Audio Power
5	RT Line Out	6	RT Line Out
7	Reserved	8	
9	LFT Line Out	10	LFT Line Out

**1.7.6.3 Telephony Audio Header: JTAD1(Optional)**

Pin No.	Assignment
1	MONO_IN
2	Ground
3	Ground
4	MONO_OUT

## **2. BIOS Setup**

### **Introduction**

This manual discussed Award™ 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 Award BIOS™ installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. This means that it supports Intel Pentium® 4 processor input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

Adding important has customized the Award BIOS™, but nonstandard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

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

### **Plug and Play Support**

These AWARD BIOS supports the Plug and Play Version 1.0A specification. ESCD (Extended System Configuration Data) write is supported.

### **EPA Green PC Support**

This AWARD BIOS supports Version 1.03 of the EPA Green PC specification.

### **APM Support**

These AWARD BIOS supports Version 1.1&1.2 of the Advanced Power Management (APM) specification. Power management features are implemented via the System Management Interrupt (SMI). Sleep and Suspend power management modes are supported. Power to the hard disk drives and video monitors can be managed by this AWARD BIOS.

**PCI Bus Support**

This AWARD BIOS also supports Version 2.1 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

**DRAM Support**

DDR SDRAM (Double Data Rate Synchronous DRAM) are supported.

**Supported CPUs**

This AWARD BIOS supports the Intel Pentium® 4 CPU.

**Using Setup**

In general, you use the arrow keys to highlight items, press <Enter> to select, use the <PgUp> and <PgDn> 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 by using the keyboard.

<b>Keystroke</b>	<b>Function</b>
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left (menu bar)
Right arrow	Move to the item on the right (menu bar)
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

## 2.1 Main Menu

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

**!! WARNING !!**

The information about BIOS defaults on manual (**Figure 1,2,3,4,5,6,7,8,9**) is just for reference, please refer to the BIOS installed on board, for update information.

■ Figure 1. Main Menu



**Standard CMOS Features**

This submenu contains industry standard configurable options.

**Advanced BIOS Features**

This submenu allows you to configure enhanced features of the BIOS.

**Advanced Chipset Features**

This submenu allows you to configure special chipset features.

**Integrated Peripherals**

This submenu allows you to configure certain IDE hard drive options and Programmed Input/ Output features.

**Power Management Setup**

This submenu allows you to configure the power management features.

**PnP/PCI Configurations**

This submenu allows you to configure certain “Plug and Play” and PCI options.

**PC Health Status**

This submenu allows you to monitor the hardware of your system.

**Frequency/Voltage Control**

This submenu allows you to change CPU Vcore Voltage and CPU/PCI clock. **(However, this function is strongly recommended not to use. Not properly change the voltage and clock may cause CPU or M/B damage!)**

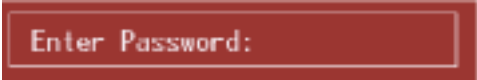
**Load Optimized Defaults**

This selection allows you to reload the BIOS when the system is having problems particularly with the boot sequence. These configurations are factory settings optimized for this system. A confirmation message will be displayed before defaults are set.



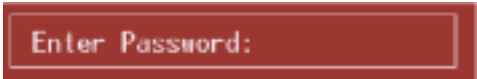
**Set Supervisor Password**

Setting the supervisor password will prohibit everyone except the supervisor from making changes using the CMOS Setup Utility. You will be prompted with to enter a password.



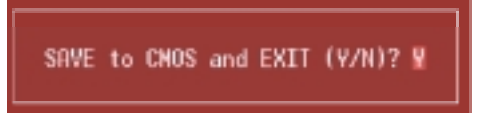
**Set User Password**

If the Supervisor Password is not set, then the User Password will function in the same way as the Supervisor Password. If the Supervisor Password is set and the User Password is set, the "User" will only be able to view configurations but will not be able to change them.



**Save & Exit Setup**

Save all configuration changes to CMOS(memory) and exit setup. Confirmation message will be displayed before proceeding.



**Exit Without Saving**

Abandon all changes made during the current session and exit setup. confirmation message will be displayed before proceeding.



**Update BIOS**

This submenu allows you to update bios.

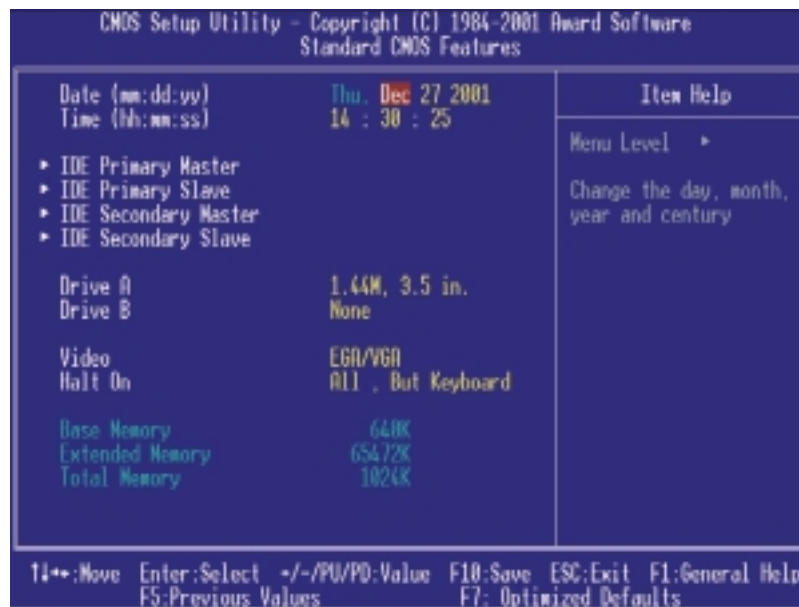




## 2.2 Standard CMOS Features

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.

■ **Figure 2. Standard CMOS Setup**



**Main Menu Selections**

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

<b>Item</b>	<b>Options</b>	<b>Description</b>
Date	mm : dd : yy	Set the system date. Note that the 'Day' automatically changes when you set the date.
Time	hh : mm : ss	Set the system internal clock.
IDE Primary Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
IDE Secondary Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
IDE Secondary Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
Drive A  Drive B	360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in None	Select the type of floppy disk drive installed in your system.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.

<b>Item</b>	<b>Options</b>	<b>Description</b>
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.

## 2.3 Advanced BIOS Features

■ Figure 3. Advanced BIOS Setup



### Virus Warning

This option allows you to choose the VIRUS Warning feature that is used to protect the IDE Hard Disk boot sector. If this function is enabled and an attempt is made to write to the boot sector, BIOS will display a warning message on the screen and sound an alarm beep.

<b>Disabled</b> (default)	Virus protection is disabled.
Enabled	Virus protection is activated.

**CPU L1 & L2 Cache**

This option allows you to enable or disable the CPU L1 & L2 Cache which improve performance.

**The Choices:** **Enabled** (default), Disabled.

**Quick Power On Self Test**

Enabling this option will cause an abridged version of the Power On Self-Test (POST) to execute after you power up the computer.

**Enabled** (default)      Enable quick POST.  
Disabled                      Normal POST.

**First /Second/Third/ Boot Other Device**

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

**The Choices:** Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, LAN, Disabled.

**Swap Floppy Drive**

For systems with two floppy drives, this option allows you to swap logical drive assignments.

**The Choices:** Enabled, **Disabled** (default).

**Boot Up Floppy Seek**

Enabling this option will test the floppy drives to determine if they have 40 or 80 tracks. Disabling this option reduces the time it takes to boot-up.

**The Choices:** **Enabled** (default), Disabled.

**Boot Up NumLock Status**

Selects the NumLock. State after power on.

**On** (default)                  Numpad is number keys.  
Off                                  Numpad is arrow keys.

**Gate A20 Option**

Select if chipset or keyboard controller should control Gate A20.

Normal                          A pin in the keyboard controller controls Gate A20.  
**Fast** (default)                  Lets chipset control Gate A20.

**Typematic Rate Setting**

When a key is held down, the keystroke will repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be configured.

**Disabled** (default)  
Enabled

**Typematic Rate (Chars/Sec)**

Sets the rate at which a keystroke is repeated when you hold the key down.

**The Choices:** 6 (default), 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 Choices:** 250 (default), 500,750,1000.

**Security Option**

This option will enable only individuals with passwords to bring the system online and/or to use the CMOS Setup Utility.

System	A password is required for the system to boot and is also required to access the Setup Utility.
<b>Setup</b> (default)	A password is required to access the Setup Utility only.

This will only apply if passwords are set from the Setup main menu.

**APIC Mode**

By selecting Enabled enables ACPI device mode reporting from the BIOS to the operating system.

**The Choices:** Enabled (default), Disabled.

**MPS Version Control For OS**

The BIOS supports version 1.1 and 1.4 of the Intel multiprocessor specification. Select version supported by the operation system running on this computer.

**The Choices:** 1.4 (default), 1.1.

**OS Select For DRAM > 64MB**

A choice other than Non-OS2 is only used for OS2 systems with memory exceeding 64MB.

**The Choices:** Non-OS2 (default), OS2.

**Report No FDD For WIN 95w**

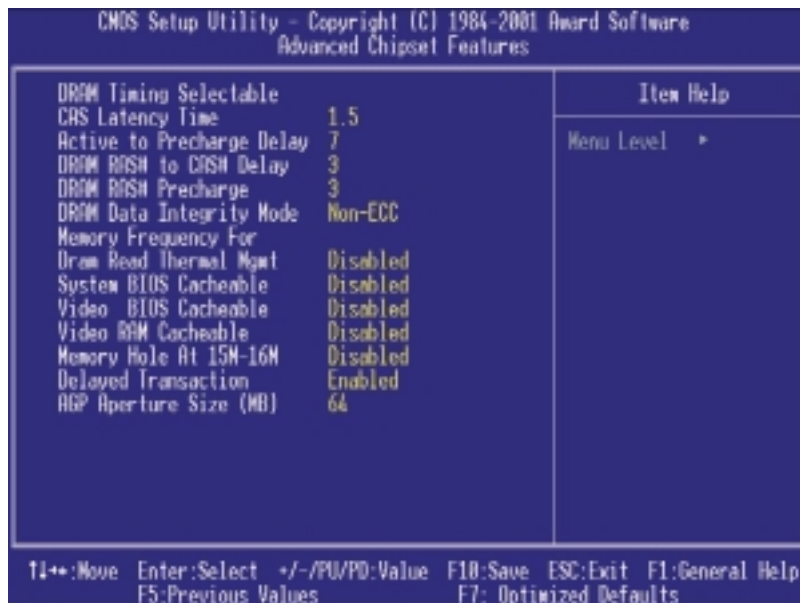
Whether report no FDD for Win 95 or not.

**The Choices:** No (default), Yes.

## 2.4 Advanced Chipset Features

This submenu allows you to configure the specific features of the chipset installed on your system. This chipset manage bus speeds and access to system memory resources, such as DRAM and external cache. It also coordinates communications with the PCI bus. The default settings that came with your system have been optimized and therefore should not be changed unless you are suspicious that the settings have been changed incorrectly.

■ **Figure 4. Advanced Chipset Setup**





**DRAM Timing Selectable**

The default is By SPD.

**CAS Latency Time**

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

**The Choices:** 1.5 (default), 2, 2.5, 3.

**Active to Precharge Delay**

This item controls the number of DRAM clocks to activate the precharge delay.

**The Choices:** 7 (default), 6, 5.

**DRAM RAS# to CAS# Delay**

This field let you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

**The Choices:** 3 (default), 2.

**DRAM RAS# Precharge**

If an insufficient number of cycle is allowed for RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete, and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

**The Choices:** 3 (default), 2.

**DRAM Data Integrity Mode**

This item select supported ECC or Non-ECC for DRAM.

**The Choices:** Non-ECC (default), ECC.

**Memory Frequency For**

The default is **Auto**.

**Dram Read Thermal Mgmt**

The Intel 845 Chipset MCH provides Memory Thermal Management functionality. It increases the system reliability by decreasing thermal stress on system memory and on the Intel 845 Chipset MCH.

**The Choices:** Disabled (default), Enabled.

**System BIOS Cacheable**

Selecting Enabled allows you caching of the system BIOS ROM at F0000h~FFFFFh, resulting a better system performance. However, if any program writes to this memory area, a system error may result.

**The Choices:** Disabled (default), Enabled.

**Video BIOS Cacheable**

Select Enabled allows caching of the video BIOS, resulting a better system performance. However, if any program writes to this memory area, a system error may result.

**The Choices:** Disabled (default), Enabled.

**Video RAM Cacheable**

Enabling this option allows caching of the video RAM, resulting a better system performance. However, if any program writes to this memory area , a system error may result.

**The Choices:** Disabled (default), Enabled.

**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 discussed their memory requirements.

**The Choices:** Disabled (default), Enabled.

**Delayed Transaction**

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

**The Choices:** Enabled (default), Disabled.

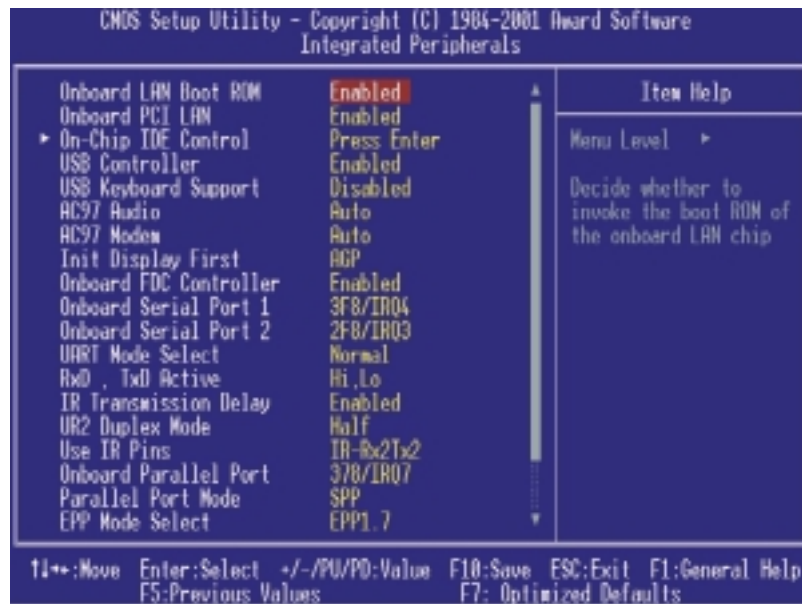
**AGP Aperture Size (MB)**

Select the size of the Accelerated Graphics Port (AGP) aperture. The apertures is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

**The Choices:** 4M, 8M, 16M, 32M, 64M (default), 128M, 256M.

## 2.5 Integrated Peripherals

■ Figure 5. Integrated Peripherals



### Onboard LAN Boot ROM

This item allows you to enable or disable Onboard LAN Boot ROM.

**The Choices:** Enabled (default), Disabled.

### Onboard PCI LAN

This item allows you to enable or disable Onboard PCI LAN.

**The Choices:** Enabled (default), Disabled.

**On-Chip IDE Control**

The chipset contains a PCI IDE interface with support for two IDE channels. Select "Enabled" to activate the first and / or second IDE interface. If you install a primary and / or secondary add-in IDE interface, select "Disabled" to deactivate an interface. If you highlight the literal "Press Enter" next to the "Onchip IDE Control" label and then press the enter key, it will take you a submenu with the following options:

**On-Chip 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 Choices:** Enabled (default), Disabled.

**IDE Primary / Secondary Master / Slave PIO**

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

**The Choices:** Auto (default), Mode0, Mode1, Mode2, Mode3, Mode4.

**IDE Primary / Secondary Master / Slave UDMA**

Ultra DMA/100 functionality can be implemented if it is supported by the IDE hard drives in your system. As well, your operating environment requires 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/100, select Auto to enable BIOS support.

**The Choices:** Auto (default), 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 mode (most new drives do), select Enabled for automatic detection of the optimal number of block read / write per sector where the drive can support.

**The Choices:** Enabled (default), Disabled.

**USB Controller**

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

**The Choices:** Enabled (default), Disabled.

**USB Keyboard Support**

The default value is Disabled.

<b>Enabled</b>	Enable USB Keyboard Support.
<b>Disabled</b> (default)	Disable USB Keyboard Support.

**AC97 Audio/ Modem**

This item allows you to decide to enable/ disable to support AC97 Audio/Modem.

**The Choices:** Auto (default), Disabled.

**Init Display First**

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

**The Choices:** AGP (default), PCI Solt.

**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 install and FDC or the system has no floppy drive, select Disabled in this field.

**The Choices:** Enabled (default), Disabled.

**Onboard Serial Port 1/Port 2**

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

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

**UART Mode Select**

This item allows you to determine which Infrared (IR) function of onboard I/O chip.

**The Choices:** Normal (default), ASKIR, IrDA.

**RxD , TxD Active**

The item allows you to determine which Infrared (IR) function of onboard I/O chip.

**The Choices:** **Hi/ Lo** (default), Hi/ Hi, Lo/ Hi, Lo/ Lo.

**IR Transmission Delay**

This item allows you to enable/ disable IR transmission delay.

**The Choices:** **Enabled** (default), Disabled.

**UR2 Duplex Mode**

Select the value required by the IR device connected to the IR port. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time.

**The Choices:** **Half** (default), Full.

**Use IR Pins**

Consult your IR peripheral documentation to select the correct setting of the TxD and RxD signals.

**The Choices:** **IR-Rx2Tx2** (default), RxD2 TxD2.

**Onboard Parallel Port**

This item allows you to determine access onboard parallel port controller with which I/O Address.

**The Choices:** **378/IRQ7** (default), 278/IRQ5, 3BC/IRQ7, Disabled.

**Parallel Port Mode**

The default value is SPP.

<b>SPP</b> (default)	Using Parallel Port as Standard Printer Port.
EPP	Using Parallel Port as Enhanced Parallel Port.
ECP	Using Parallel Port as Extended Capabilities Port.
ECP+EPP	Using Parallel Port as ECP & EPP mode.
Normal	Supports EPP or ECP mode.

**EPP Mode Select**

Select EPP port type 1.7 or 1.9.

**The Choices:** EPP1.7 (default), EPP1.9.

**ECP Mode Use DMA**

Select a DMA Channel for the port.

**The Choices:** 3 (default), 1.

**Game Port Address**

Game Port I/O Address.

**The Choices:** 201 (default), 209, Disabled.

**Midi Port Address**

Midi Port Base I/O Address.

**The Choices:** 330 (default), 300, 290, Disabled.

**Midi Port IRQ**

This determines the IRQ in which the Midi Port can use.

**The Choices:** 10 (default), 5.

## 2.6 Power Management Setup

The Power Management Setup Menu allows you to configure your system to utilize energy conservation and power up/power down features.

■ **Figure 6. Power Management Setup**



### ACPI function

This item displays the status of the Advanced Configuration and Power Management (ACPI).

**The Choices:** Enabled (default), Disabled.



**ACPI Suspend Type**

The item allows you to select the suspend type under the ACPI operating system.

**The Choices:** S1 (POS) (default)      Power on Suspend  
                  S3 (STR)                      Suspend to RAM  
                  S1 & S3

**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.Suspend Mode.

There are four options of Power Management, three of which have fixed mode settings

**Min. Power Saving**

Minimum power management.  
Suspend Mode = 1 hr.  
HDD Power Down = 15 min

**Max. Power Saving**

Maximum power management only available for sl CPU's.  
Suspend Mode = 1 min.  
HDD Power Down = 1 min.

**User Defined (default)**

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 option determines the manner in which the monitor is goes blank.

**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 Support** (default)

Initial display power management signaling.

**Video Off In Suspend**

This determines the manner in which the monitor is blanked.

**The Choices:** Yes (default), No.

**Suspend Type**

Select the Suspend Type.

**The Choices:** Stop Grant (default), PwrOn Suspend.

**Modem Use IRQ**

This determines the IRQ, which can be applied in MODEM use.

**The Choices:**3 (default),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 Choices:** Disabled (default), 1Min, 2Min, 4Min, 8Min, 12Min, 20Min, 30Min, 40Min, 1Hour.

**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 Choices:** Disabled (default), 1Min, 2Min, 3Min, 4Min, 5Min, 6Min, 7Min, 8Min, 9Min, 10Min, 11Min, 12Min, 13Min, 14Min, 15Min.

**Soft-Off by PWR-BTTN**

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

**The Choices:** Delay 4 Sec, **Instant-Off** (default).

**PWRON After PWR-Fail**

This field determines the action the system will automatically take when power is restored to a system that had lost power previously without any subsequent manual intervention. There are 3 sources that provide current to the CMOS area that retains these Power-On instructions; the motherboard battery (3V), the Power Supply (5VSB), and the Power Supply (3.3V). While AC is not supplying power, the motherboard uses the motherboard battery (3V). If AC power is supplied and the Power Supply is not turned on, 5VSB from the Power Supply is used. When the Power Supply is eventually turned on 3.3V from the Power Supply will be used. There are 3 options: “Former-Sts”, “On”, “Off”.

“Former-Sts” (default)	Means to maintain the last status of the CMOS when AC power is lost.
“On”	Means always set CMOS to the “On” status when AC power is lost
“Off”	Means always set CMOS to the “Off” status when AC power is lost.

For example: If set to “Former-Sts” and AC power is lost when system is live, then after AC power is restored, the system will automatically power on. If AC power is lost when system is not live, system will remain powered off.

**CPU THRM-Throttling**

Select the CPU THRM-Throttling rate.

**The Choices:** 87.5%, 75.5%, 62.5%, **50.0%** (default), 37.5%, 25%, 12.5%.

**Wake-Up by PCI card**

When you select Enabled, a PME signal from PCI card returns the system to Full On state.

**The Choices:** Disabled (default), Enabled.

**Power On by Ring**

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

**The Choices:** Disabled (default), Enabled.

**WakeUp On LAN**

To use this function, you need a LAN add-on card which support power on function. It should also support the wake-up on LAN jumper.

**The Choices:** Disabled (default), Enabled.

**Resume by Alarm**

This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, Choose the Date and Time Alarm:

**Date (of Month) Alarm** You can choose which month the system will boot up.

**Time (hh:mm:ss) Alarm** You can choose hour, minute and second the system will boot up.

*Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.*

**Reload Global Timer Events**

Reload Global Timer 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 0/1**

**Secondary IDE 0/1**

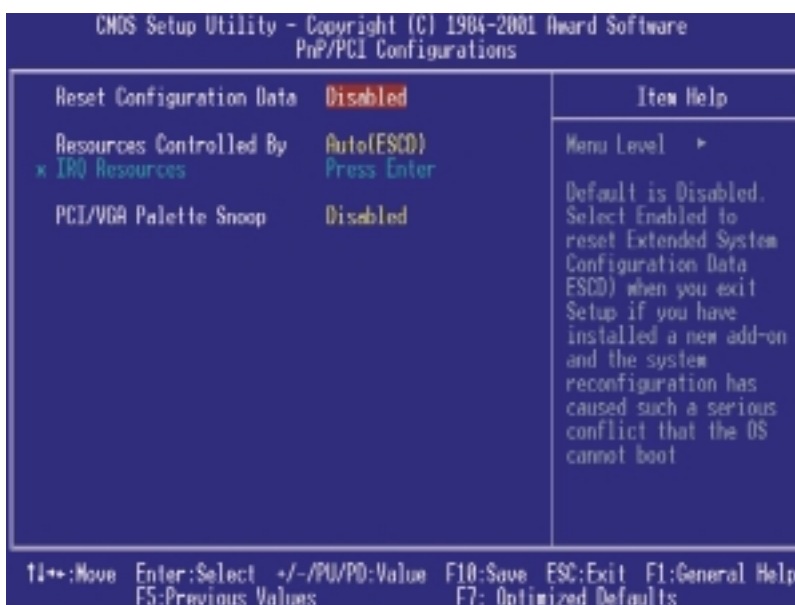
**FDD, COM, LPT Port**

**PCI PIRQ [A-D]#**

## 2.7 PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

■ **Figure 7. PnP/PCI Configurations**



**Reset Configuration Data**

The system BIOS supports the PnP feature which requires the system to record which resources are assigned and protects resources from conflict. Every peripheral device has a node, which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved in the system BIOS. If the Disabled (default) option is chosen, the system's ESCD will update only when the new configuration varies from the last one. If the Enabled option is chosen, the system is forced to update ESCDs and then is automatically set to the "Disabled" mode.

The above settings will be shown on the screen only if "Manual" is chosen for the resources controlled by function.

Legacy is the term, which signifies that a resource is assigned to the ISA Bus and provides non-PnP ISA add-on cards. PCI / ISA PnP signifies that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.

**The Choices:** Disabled (default), Enabled.

**Resources Controlled By**

By Choosing "Auto(ESCD)" (default), the system BIOS will detect the system resources and automatically assign the relative IRQ and DMA channel for each peripheral. By Choosing "Manual", the user will need to assign IRQ & DMA for add-on cards. Be sure that there are no IRQ/DMA and I/O port conflicts.

**IRQ Resources**

This submenu will allow you to assign each system interrupt a type, depending on the type of device using the interrupt. When you press the "Press Enter" tag, you will be directed to a submenu that will allow you to configure the system interrupts. This is only configurable when "Resources Controlled By" is set to "Manual".

IRQ-3	assigned to	PCI Device
IRQ-4	assigned to	PCI Device
IRQ-5	assigned to	PCI Device
IRQ-7	assigned to	PCI Device
IRQ-9	assigned to	PCI Device
IRQ-10	assigned to	PCI Device
IRQ-11	assigned to	PCI Device
IRQ-12	assigned to	PCI Device
IRQ-14	assigned to	PCI Device
IRQ-15	assigned to	PCI Device

**PCI / VGA Palette Snoop**

Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide boot information and VGA compatibility.

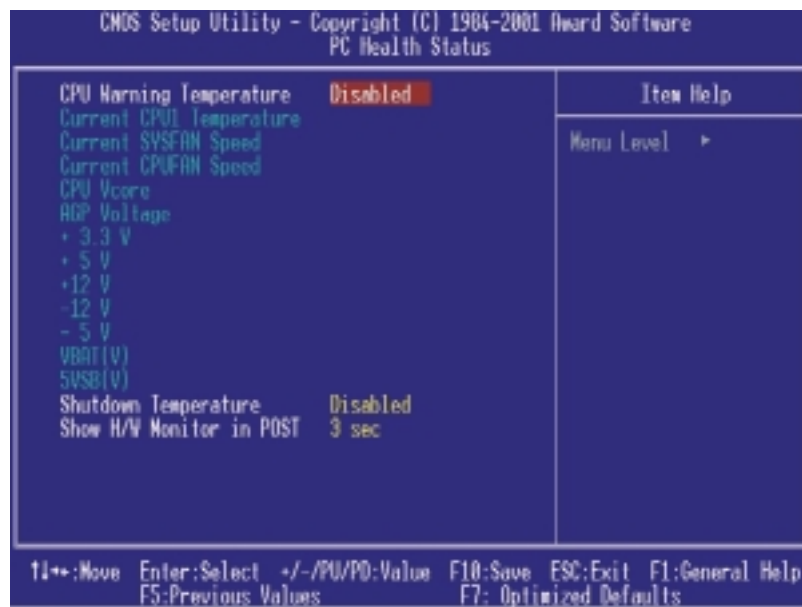
However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the Write access to the VGA palette and registers the snoop data. In PCI based systems, where the VGA controller is on the PCI bus and a non-VGA graphic controller is on an ISA bus, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Write.

In this case, the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

<b>Disabled</b> (default)	Disables the function.
Enabled	Enables the function.

## 2.8 PC Health Status

### ■ Figure 8. PC Health Status



#### CPU Warning Temperature

The item will prevent CPU from overheating.

**The Choices:** **Disabled** (default), 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 63°C/145°F, 66°C/151°F, 70°C/158°F.

#### Current CPU1 Temperature

Show you the current CPU1 temperature.

#### Current SYSFAN Speed

This field displays the current speed SYSTEM fan.



**Current CPUFAN Speed**

This field displays the current CPUFAN speed.

**CPU Vcore/AGP Voltage/+3.3V/+5V/+12V/VBAT(V)/5VSB(V)**

Detect the system's voltage status automatically.

**Shutdown Temperature**

This item allows you to set up the CPU shutdown Temperature. This item only effective under Windows 98 ACPI mode.

**The Choices:** **Disabled** (default), 60°C/140°F, 65°C/149°F, 70°C/158°F, 75°C/167°F.

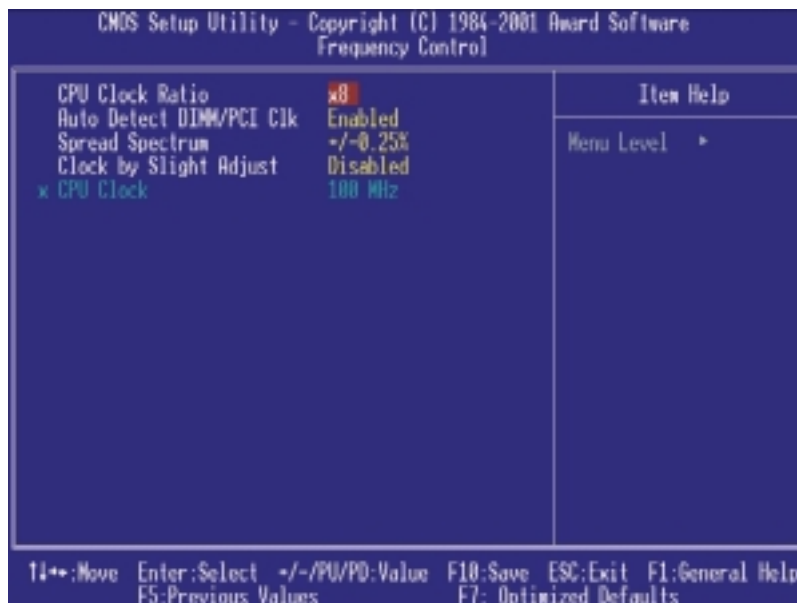
**Show H/W Monitor in POST**

If you computer contain a monitoring system, it will show PC health status during POST stage. The item offers several delay time to select you want.

**The Choices:** 3 sec (default), 2 sec, 1 sec, None.

## 2.9 Frequency Control

### ■ Figure 9. Frequency Control



#### CPU Clock Ratio

This item allows you to select the CPU Ratio.

#### Auto Detect DIMM/PCI Clk

This item allows you to enable / disable auto Detect DIMM/PCI Clock.

The Choices: Enabled (default), Disabled.

#### Spread Spectrum

This item allows you to enable / disable spectrum for all clock.

**The Choices:** +/-0.25% (default), -0.5%, +/-0.5%M +/-0.38%, Disabled.

**Clock by Slight Adjust**

This item allows you to adjust CPU frequency when “Slight Adjust” enable.  
The Choices: Disabled (default), Enabled.

**CPU Clock**

This item allows you to select CPU Clock .



If unfortunately, the system's frequency that you are selected is not functioning, there are two methods of booting-up the system.

Method 1: Clear the COMS data by setting the JCOMS1 ((2-3) closed)) as “ON” status. All the CMOS data will be loaded as defaults setting.

Method 2: Press the <Insert> key and Power button simultaneously, after that keep-on pressing the <Insert> key until the power-on screen showed. This action will boot-up the system according to FSB of the processor.

※ **It's strongly recommended to set CPU Vcore and clock in default setting. If the CPU Vcore and clock are not in default setting, it may cause CPU or M/B damage.**

### 3. Trouble Shooting

#### **PROBLEM**

No power to the system at all. Power light does not illuminate, fan inside power supply does not turn on. Indicator light on keyboard does not turn on.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Power cable is unplugged.	Visually inspect power cable.	Make sure power cable is securely plugged in.
Defective power cable.	Visually inspect the cable; try another cable.	Replace cable.
Power supply failure.	Power cable and wall socket are OK, but system is still dead.	Contact technical support.
Faulty wall outlet; circuit breaker or fuse blown.	Plug in device known to work in socket and test	Use different socket, repair outlet, reset circuit breaker or replace fuse.

#### **PROBLEM**

System inoperative. Keyboard lights are on, power indicator lights are lit, hard drive is spinning.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Memory DIMM is partially dislodged from the slot on the motherboard.	Turn off computer. Take cover off system unit. Check the DIMM to ensure it is securely seated in the slot.	Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.

**PROBLEM**

System does not boot from hard disk drive, can be booted from CD-ROM drive.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Connector between hard drive and system board unplugged.	When attempting to run the FDISK utility you get a message, INVALID DRIVE SPECIFICATION.	Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the standard CMOS setup.
Damaged hard disk or disk controller.	Format hard disk; if unable to do so the hard disk may be defective.	Contact technical support.
Hard disk directory or FAT is scrambled.	Run the FDISK program, format the hard drive. Copy data that was backed up onto hard drive.	Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.

**PROBLEM**

System only boots from CD-ROM. Hard disk can be read and applications can be used but booting from hard disk is impossible.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Hard Disk boot program has been destroyed.	A number of causes could be behind this.	Back up data and applications files. Reformat the hard drive. Re-install applications and data using backup disks.

**PROBLEM**

Error message reading “SECTOR NOT FOUND” or other error messages not allowing certain data to be retrieved.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
A number of causes could be behind this.	Use a file by file backup instead of an image backup to backup the hard disk.	Back up any salvageable data. Then low level format, partition, and high level format the hard drive. Re-install all saved data when completed.

**PROBLEM**

Screen message says “Invalid Configuration” or “CMOS Failure.”

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Incorrect information entered into the configuration (setup) program.	Check the configuration program. Replace any incorrect information.	Review system's equipment . Make sure correct information is in setup.

**PROBLEM**

Screen is blank.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
No power to monitor.		Check the power connectors to monitor and to system. Make sure monitor is connected to display card.
Monitor not connected to computer.		See instructions above.

**PROBLEM**

No screen.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Memory problem.		Reboot computer. Reinstall memory, make sure that all memory modules are installed in correct sockets.
Computer virus.		Use anti-virus programs to detect and clean viruses.

**PROBLEM**

Screen goes blank periodically.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Screen saver is enabled.		Disable screen saver.

**PROBLEM**

Keyboard failure.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Keyboard is disconnected.		Reconnect keyboard. Check keys again, if no improvement replace keyboard.

**PROBLEM**

No color on screen.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Faulty Monitor.		If possible, connect monitor to another system. If no color replace monitor.
CMOS incorrectly set up.		Call technical support.

**PROBLEM**

C: drive failure.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Hard drive cable not connected properly.		Check hard drive cable.

**PROBLEM**

Cannot boot system after installing second hard drive.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Master/slave jumpers not set correctly.		Set master/slave jumpers correctly.
Hard drives not compatible / different manufacturers.		Run SETUP program and select correct drive types. Call drive manufacturers for compatibility with other drives.



**PROBLEM**

Missing operating system on hard drive.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
CMOS setup has been changed.		Run setup and select correct drive type.

**PROBLEM**

Certain keys do not function.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Keys jammed or defective.		Replace keyboard.

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