PT-6IBD
PT-6IZP
PT-6IBP

ATX MAINBOARD

(VER. 3.x)

USER'S MANUAL

TABLE OF CONTENTS

SOMETHING IMPORTANT !

☆ TRADEMARKS

All trademarks used in this manual are the property of their respective owners.

☆ LOAD SETUP DEFAULTS

"LOAD SETUP DEFAULTS" is the function which will have the BIOS default settings loaded into the CMOS memory, these default settings are the best-case values which will optimize system performance and increase system stability This function will be necessitated when you receive this mainboard, or when the system CMOS data is corrupted. Please refer to the Section 4.8 for the procedures.

☆ DISCHARAGE CMOS DATA

Whenever you want to discharge the CMOS data or open the system chassis, Make sure to disconnect the AC power first because there is always the 5V standby voltage connected to the ATX form-factor mainboard. Without disconnecting the AC power connector from the PC system, the mainboard can be damaged by any improper action .

☆ WAKE ON LAN

In order to support the Wake On LAN feature, the system requires a special SPS (Switching Power Supply), Such power supply must be able to provide at least 700 mA of driving capability on the "5V standby" voltage. Please refer to the Section 3.3 for pin assignment.

☆ WARNING !

The "Static Electricity" may cause damage to the components on the mainboard, In order to avoid the damage to the mainboard accidentally, please discharge all static electricity from your body before touching this mainboard.

☆ NOTICE

Information presented in this manual has been carefully checked for reliability; however, no responsibility is assumed for inaccuracies. The information contained in this manual is subject to change without notice.

1. INTRODUCTION

1.1 OVERVIEW

This Mainboard is a high performance personal computer mainboard. It is a Slot1, ATX form-factor mainboard with the Intel® 82440BX/ZX AGPset™ and Winbond® I/O chipset. There are the A.G.P. (Accelerated Graphics Port) and PCI Local Bus on the mainboard.. It is designed for 233MHz, 266MHz, 300 MHz, 333MHz, 350MHz, 366 MHz ,400MHz, 433MHz, 450MHz, 466MHz and 500MHz high performance Pentium™ II and Celeron™ (S.E.C. Cartridge) processors

This mainboard is designed by using the Intel® 82440BX or 82440ZX AGPset™ system chipset. When different chipset is installed on the board, the feature of the following mainboards will have different feature as following:

Model Name	Chipset	PCI Slot	DIMM Socket	ECC
PT-6IBD	BX	5	4	YES
PT-6IBP	BX	5	3	YES
PT-6IZP	ZX	4	2	NO

This mainboard has built-in two channel "PIO" and "Ultra DMA/33 Bus Master" mode PCI IDE ports, one Floppy Disk control port, two high speed Serial ports (UARTs) and one multi-mode Parallel port and supports PS/2™ mouse, IR and USB ports. It is designed to support the high performance Pentium™ II and Celeron™ processors for the high-end and true GREEN-PC computer systems.

Pentium™ II and Celeron™ are the 64-bit processors with RISC technology, which offers several key features such as built-in 512K/128K L2 cache, 12-stage super-pipeline architecture, out of order execution …. etc. In order to optimize of its capabilities and performances, the 32-bit Operating System (such as Windows® NT and OS/2™) and 32-bit applications are recommended.

1.2   MAINBOARD LAYOUT
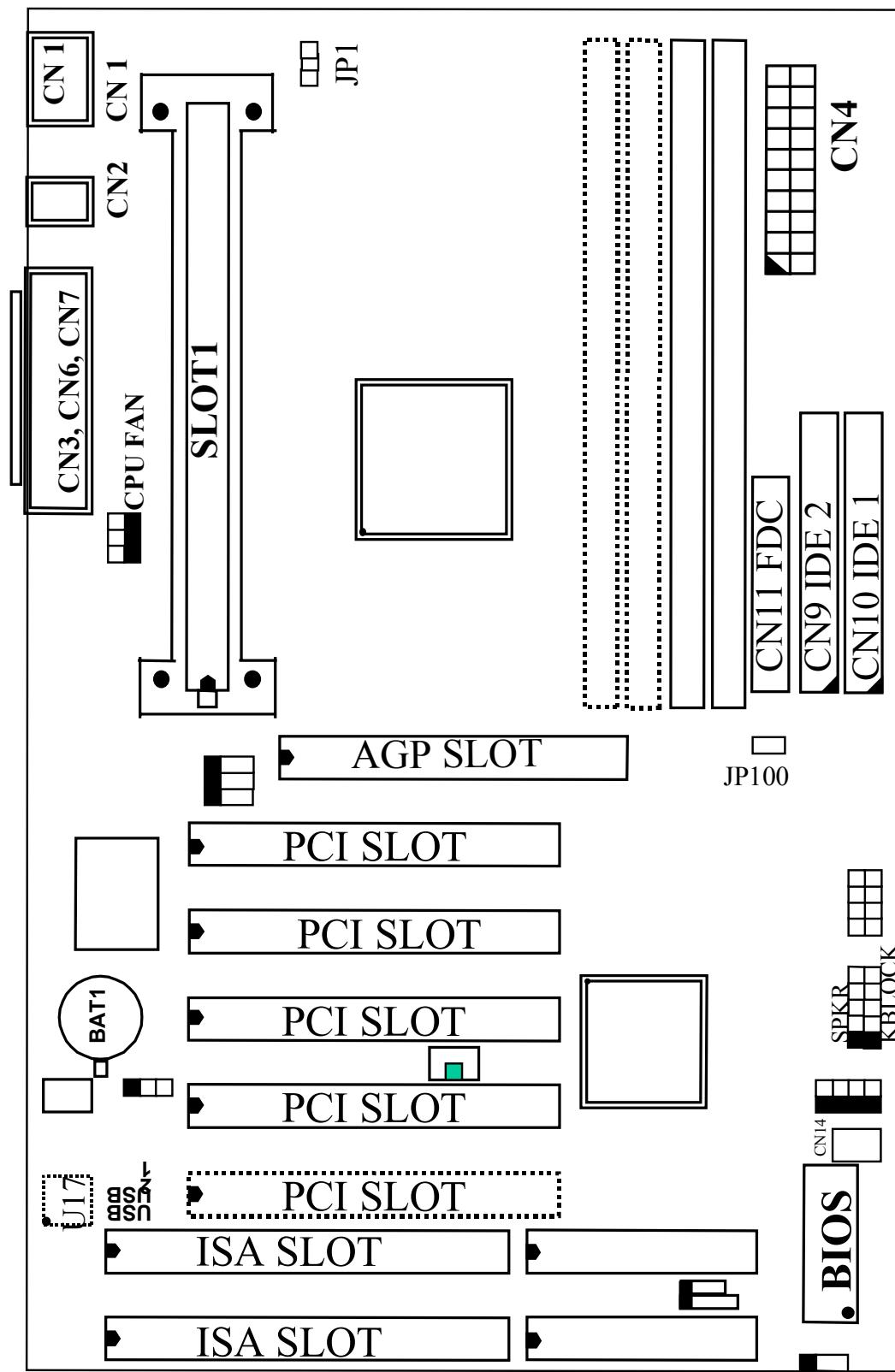
1.3   SPECIFICATIONS

◎ **CPU**
   Intel® Pentium™ II or Celeron™ processor 233, 266, 300, 333. 350, 366, 400, 433, 450, 466 and up to 500MHz.

◎ **CPU VCC**
   Switching Voltage Regulator circuits on board, supports +1.80V DC through +3.5V DC CPU Core Voltage.
   Note : The CPU Core Voltage will be Detected and adjusted automatically by the VID-pin on the CPU, so there is no manual-adjustment required to select the CPU voltage. Simply plug in the CPU and start immediately.

◎ **WORD SIZE**
   Data Path   :   8-bit, 16-bit, 32-bit, 64-bit
   Address Path   :   32-bit

◎ **PC SYSTEM CHIPSET**
   PT-6IBD, PT-6IBP: Intel® 82440BX AGPset™ (82443BX, 82371EB)
   PT-6IZP: Intel® 82440ZX AGPset™ (82443ZX, 82371EB)

◎ **SUPER I/O CHIPSET**
   Winbond® W83977TF-AW

◎ **FRONT SIDE BUS FREQUENCY**
   66 MHz and 100MHz selectable.

◎ **MEMORY**
   PT-6IBD: Four 168-pin DIMM sockets, Maximum 512 MB with ECC.
   PT-6IBP: Three 168-pin DIMM sockets, Maximum 384 MB with ECC.
   PT-6IZP: Two 168-pin DIMM sockets, Maximum 256 MB without ECC.

   CACHE :512KB pipelined burst SRAM built-in Pentium™ II processor.
           0KB or 128KB SRAM in Celeron™ processor.

◎ **BIOS**
   AWARD System BIOS. 128KB x 8 Flash ROM
   (Supports Plug & Play, ACPI, DMI and Green functions).

◎ **EXPANSION SLOTS**
AGP Slots : One 32-bit AGP Slot (Supports 1x or 2x AGP graphics cards)
PCI Slots : Five 32bit PCI slots on BX mainboard (PT-6IBD and PT-6IBP).
Four 32bit PCI slots on ZX mainboard (PT-6IZP)
ISA Slots : 16-bit x 2   (One of the slot is PCI/ISA shared)

◎ **WOL PORTS**
One WOL connector supports Wake-On-LAN (WOL up-designed)

◎ **SB-LINK PORTS**
One SB-LINK feature connector to support PCI sound cards. (such as Creative™ Labs EMU8008 sound chip)

◎ **USB PORTS**
Two Universal Serial Bus (USB) ports.

◎ **IDE PORTS**
Two channels of Ultra DMA/33 Bus Master IDE ports, which will support up to 4 IDE devices like IDE hard disk, ATAPI CD-ROM and LS-120/ZIP-100 devices. The IDE ports can be programmed to support PIO Mode 4, DMA mode 2 and Ultra DMA/33.

◎ **SUPER I/O PORTS**
1. Two high speed NS16C550 compatible serial ports (UARTs).
2. One parallel port, supports SPP/EPP/ECP mode.
3. One Floppy Disk Control port.

◎ **IR PORT**
One HPSIR and ASKIR compatible IR transmission connector (5-pin).
One Consumer IR transmission connector (4-pin, optional).

◎ **MOUSE AND KEYBOARD**
One PS/2™ mouse connector, One PS/2™ keyboard connector.

◎ **HARDWARE MONITORING** *(optional)*

Winbond W83783S (U17) is designed on the board to monitor hardware healthy status like system voltage, system temperature, and cooling fans. For example, when CPU temperature is too high, you will hear a series of beeping alarm and the CPU speed will be slowing down to throttling speed. When you hear the beeping alarm, you will have to turn the power off immediately and check on the mainboard components to see whether it is working properly or not. If you don't know how to handle it, send the PC system to your dealer for technical support. In order to make the hardware monitoring active, you will have to install the hardware monitoring program as following procedure:

Step 1. Insert the mainboard CD into the CD ROM drive.
Step 2. Select "\Driver\mainboard\Hardware Monitoring\W83783S"
Step 3. Run "SETUP.EXE" to install the hardware monitoring program.

◎ **ACPI**

Advanced Configuration and Power Interface (ACPI) function is strongly recommended by PC'98 because it will let you have many additional features and that will make your PC system becomes very friendly and convenient. Followings are the ACPI features designed on the board:

1. On Now: power on the system by panel-switch, Keyboard, PS/2™ Mouse, Modem ring-in, RTC alarm or LAN signal.
2. Power off (soft-off) by OS or Panel-switch.
3. CPU cooling fan auto-off during Suspend state.
4. Resuming of PC system. (such as Modem ring-in, RTC alarm, ... etc.)
5. Supports Full-On/Doze/Standby/Suspend operating modes.

◎ **DIMENSION**

1. Width & Length   :   305 mm x 190 mm.
2. Height   :   2 1/2 inches with CPU Retention Mechanism.
3. PCB Thickness   :   4 layers, 0.05 inches normal.
4. Weight   :   18 ounces.

ENVIRONMENT LIMIT

1. Operating Temperature : 10   to 40   . (50   to 104   )
2. Required Airflow   : 50 linear feet per minute across CPU.
3. Storage Temperature   : - 40   to 70   . (- 40   to 158   )
4. Humidity   : 0 to 90% non-condensing.
5. Altitude   : 0 to 10,000 feet.

2. INSTALLATION

2.1 UNPACKING

The mainboard contains the following components. Please inspect the following contents and confirm that everything is there in the package. If anything is missing or damaged, call your supplier for instructions before proceeding.

- This mainboard.
- One USER'S MANUAL.
- One Cable set for IDE and Floppy devices.
- One Pentium™ II Processor Retention Mechanism (RM).
- One CD diskette for device driver and utility programs.

This mainboard contains electrostatic sensitive components and it can be easily damaged by static electricity. So please leave it sealed in the original packing until when installing.

A grounded anti-static mat is recommended when unpacking and installation. Please also attached an anti static wristband to your wrist and have it grounded to the same point as the anti-static mat.

After the opening of the mainboard carton, please observe the mainboard carefully to make sure there is no shipping and handling damage before you can start to install the PC system.

Having finished all the procedures above, you are now ready to install the mainboard to the chassis. Please make sure that the chassis is the ATX type so that the mounting hole will match with this mainboard.

2.2 AMAZING WAYS TO POWER ON THE PC SYSTEM

When the mainboard has been installed successfully, there are several ways to power on the system. Please read the following description for all the details.

POWER BUTTON

The power button can be programmed by COMS setup program and it has different features. Please refer to page 3-14 for detail function description.

Note: This power button can not be used to power-on the PC system if the "Password" is selected to power on your system. (please refer to Section 4.8 for the "INTEGRATED PERIPHERALS" in the CMOS setup.) However, you can always use the power button to turn off the power.

☐ KEYBOARD (PASSWORD OR HOT KEY)

This mainboard allows you to use your personal password or a combination of hot key to power on your PC system. When the jumper setting on JP1 is "Enabled", the keyboard OnNow function will be activated. Under this circumstance, this mainboard will keeps scanning the keyboard status waiting for the correct password or hot key input even when the system power is off (the stand-by 5V is still working and the power LED on the keyboard is still active). If you have selected the Password to power on the PC system in the BIOS setup program, the only way to power on the PC system will be the correct password. (you can not use the power button on the front panel to power on the PC system.) When you have selected the keyboard hot key to power on the PC system, you will be able to use keyboard hot key to power on the PC system. (you can use the power button to power on the PC system as well.) (Please refer to Section 4.8.-PowerOn function)

When the "Password" and "Hot KEY" is selected, you will have to reboot the PC system to activate the setting, when you see the POST (Power On Self Test) is completed, the setting is changed and stored in the CMOS memory. Having finished the procedure, you may turn the power off and then you can use the keyboard to power-on the PC system afterward.

In case that you forget the "Password" or "Hot Key", disconnect the AC power for 30-60 seconds then re-connect the AC power to the PC system, the power button will be activated again and you can use the power button to turn on the system. Input your personal password again in the BIOS setup program, and then you may use the new password to power-on the PC system afterward.

☐ **PS/2™ MOUSE (LEFT OR RIGHT MOUSE BUTTON)**

If you have a PS/2™ mouse connected to the system, you may change the setup in the BIOS and use the mouse click to turn on the PC system power. Please refer to section 4.8 for the BIOS setting

To use the mouse key to turn on the PC system power, the mouse click must be done quickly and continually. Basically, 2-5 quick clicks on the mouse key (left key or right key) will turn the power immediately.

In order to activate the mouse key feature, you will have to reboot the PC system after the BIOS setting and wait until the POST (Power On Self Test) is completed. Having finished the procedure, you may use the mouse key to power-on the PC system afterward..

Note: 1. Please select "Enabled" on JP1 to enable this feature.
   2. This feature is not available on the COM port mouse(serial mouse).

☐ **RTC ALARM**

PC system can be waked up by the RTC setting in the CMOS. You can set the alarming date and time in the RTC memory, When RTC alarms, the PC system will be triggered and wakes up automatically on the date and time which you selected in the BIOS setup program.

Enable the "Resume by Alarm" selection in the BIOS setup utility, and then you will see the input request for the date and time. (the "Resume by Alarm" is located in the "POWER MANAGEMENT SETUP", please refer to Section 4.7), When you have stored the RTC alarm setting, the PC system will be turned on automatically according to the date and time which is recorded in the CMOS memory.

☐ **MODEM RING-IN**

Everyone knows that a PC system can be used as a fax machine to send or receive fax messages. But most people still use fax machine to receive their messages because it is not practical to have the system powered on all day long waiting for the incoming messages. Now the problem can be solved because this mainboard can be triggered by a modem ring-in signal.

When you have a *external* modem installed, you can leave the PC system power off. Whenever there is the incoming message, the PC system will be triggered by the ring-in signal and wake up automatically to receive the message for you. From now on, you can tell your PC system to receive the fax message for you.

In order to use the ring-in signal to wake up your PC system, you will have to use the *EXTERNAL MODEM* and have it connected to one of the *SERIAL PORTS* (COMA or COM B) on the mainboard. When the mainboard detects the ring-in signal from the serial port, the system power will be turned on and start to receive the incoming messages automatically. (you need to have the software like Award Zero-Volt Data-Suspend Utility so that you can use the fax utility to receive the incoming fax message).

To enable the Modem Ring-In feature, you have to run the BIOS setup utility and enable the "Resume by Ring or LAN" option (it is located in the "POWER MANAGEMENT SETUP", please refer to Section 4.7 for the settings).

Note: <u>This function is not available when using the internal MODEM card.</u>

□ **WAKE ON LAN (WOL)**
There is a WOL connector CN12 on the mainboard which is designed to connect to the signal from a LAN card which supports the Wake On LAN feature. When such LAN card is installed, you may turn on the PC system from the remote server and monitor the PC status. To enable this feature, you will have to use the BIOS setup utility to enable the "Resume by Ring or LAN" in the BIOS setup program.

Note: This function will be disabled if you turn off the power before the system   can verify the DMI pool data.

2.3 POWER OFF THE PC SYSTEM

There are two ways to power off the system. They are "Shut Down by Power Button" and " Shut Down by OS". (such as Windows® 95 and Windows® 98, you can choose the **Shut Down** from the file menu and the system will be powered off immediately).

3. HARDWARE SETUP

Before you can start to install this mainboard, some hardware settings is required to make sure it will work perfectly with the devices which you are going to install in your PC system. To configure the mainboard is a simple task, only a few jumpers, connectors, cables and sockets needs to be selected and configured. (please refer to page 1-2 to see the mainboard layout)

3.1 INSTALLATION OF CPU

When you have installed the Pentium™ II or Celeron™ processor onto the mainboard, it will detect the CPU type and decide the CPU voltage automatically. So you don't have to make any jumper setting to select the CPU voltage. All you have to do is use JP5, JP6 and JP7 to select the CPU clock ratio. (See Section 3.4)

The socket where we are going to plug in the CPU is the slot type connector (J1). This slot is designed for Pentium ™ II and Celeron™ processors and we call such new CPU socket – the **SLOT 1**.

Basically, Slot 1 is a new architecture and it is totally different to the traditional Pentium CPU socket (Socket 7). Because the Slot 1 is a revolutionary new architecture and the installation of Pentium™ II processor will need some additional skill.

This mainboard comes with the universal purpose retention mechanism (some people call it CPU Holder) which can be used to hold the CPU firmly on the mainboard. Before you can install the CPU onto the mainboard, please refer to the installation guide and then install the CPU Holder on the mainboard.

3.2 INSTALLING THE DRAM MODULES

This mainboard has the DIMM sockets designed on the mainboard, each DIMM can be single-bank or double-bank, In order to have a better performance, only the Synchronous (SDRAM) memory is recommended. (Both Symmetrical and Asymmetrical DRAM addressing are supported.),.

This mainboard supports a DIMM plug-and-play support via Serial Presence Detect (SPD) mechanism via the SMBus interface. In order to give the best performance to the PC system, the DIMM module with SPD is strongly recommended especially when installing the 100MHz processor to the board. The SDRAM module with SPD is designed to increase the system performance and make system more stable and compatible at the same time. When the system BIOS detects the SPD DIMM module populated on the mainboard, the system BIOS will retrieve the information (such as DRAM type, size, access timing ... etc.) which is stored in the DIMM module. The system BIOS will then use such information to determine what operating parameters will be used for individual DIMM module automatically and gives the best performance and reliability to your PC system.

If the system BIOS can not detect the SPD on the DIMM module. the system BIOS will use the default parameters which is saved in the BIOS. Such parameter will work with most DRAM modules, but it will reduce the system performance because it is not optimized.

According to what Intel suggested, the system board shall stop and not to continue when there is no SPD module can not be detected. However, this mainboard is downgrade compatible with the 66HMz processors. In order to make sure that the system board will work normally with 66MHz processors, the system BIOS will continue to load the operation system when it can not detect the SPD RAM module. Nevertheless, SRAM module with SPD feature is still strongly recommended when you are using the 100MHz processor.
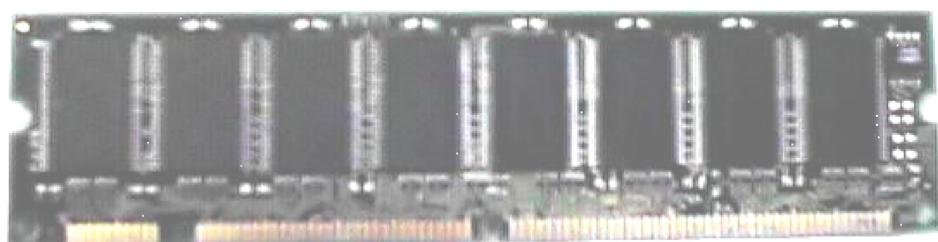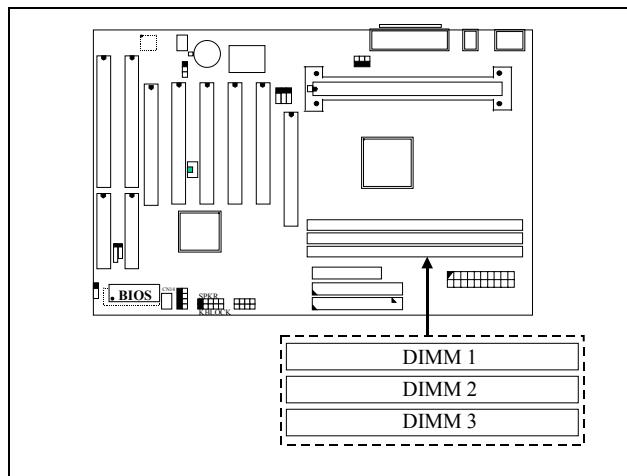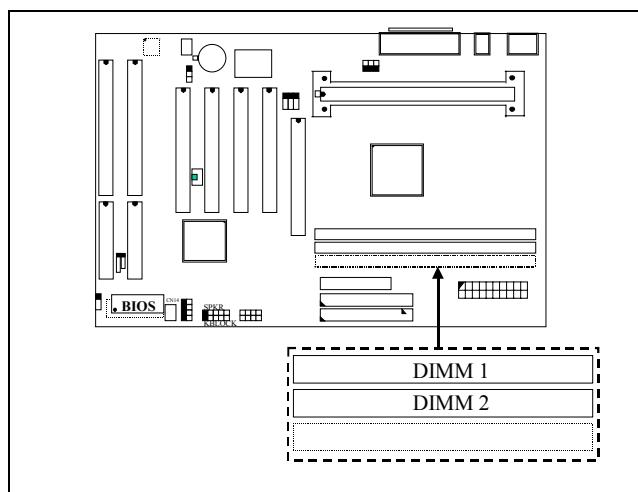

Picture of SPD DIMM module

The number of DIMM module will be different in different mainboard, please refer to the following pictures for the memory subsystem for different mainboard:
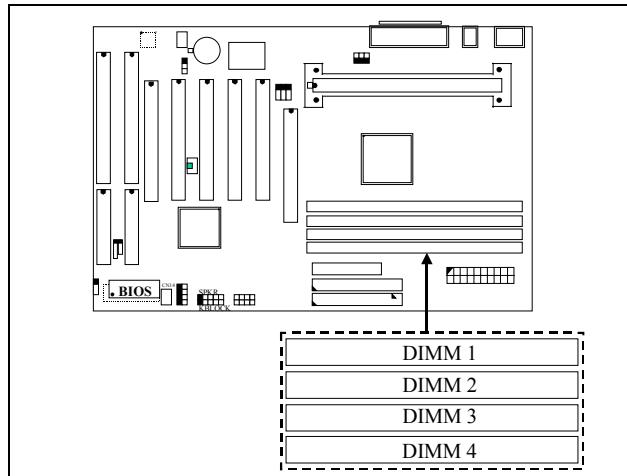
Picture of PT-6IBD DRAM subsystem

Picture of PT-6IBP DRAM subsystem

Picture of PT-6IZP DRAM subsystem

In order to increase of the system performance, two suggestions are recommended when you are installing the DIMM modules :

1. Use the SDRAM module with SPD.
2. Always install DIMM module starting from DIMM 1 socket first, and then DIMM 2 and DIMM 3.

When your mainboard has the 440BX chipset onboard, the ECC feature can be enabled and it can be used to check the memory sub-system and make sure there is no mistake on the data transmission (this feature can be selected in the BIOS CMOS setup, please refer to Section 4.6 for the BIOS setting, the default status is Non-ECC selected.) Before you enable the ECC checking feature, please make sure that all DIMM modules have the true *parity bit*.

3.3   CONNECTORS

The connectors on the mainboard are either the pin header type or D-type connectors, they are used to connect the accessories or peripheral devices (such as power, mouse, printer,...etc.). Followings are the connectors with its description and the pin assignment which is designed on the mainboard.

(A) BAT1:   Battery Socket (Use the 3 Volts Lithium battery : CR2032)

| BAT1: Battery Socket			
Pin#	Pin name	Pin#	Pin name
+	Battery Positive	-	Ground
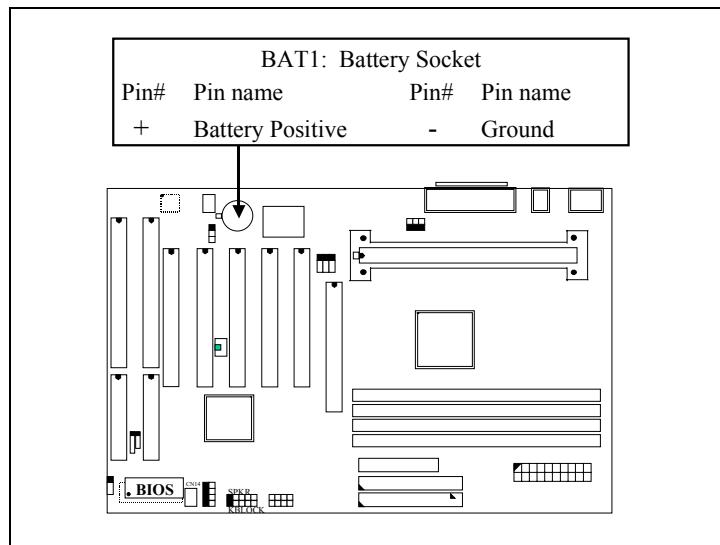
(B) CN1: PS/2 Mouse and Keyboard Connector
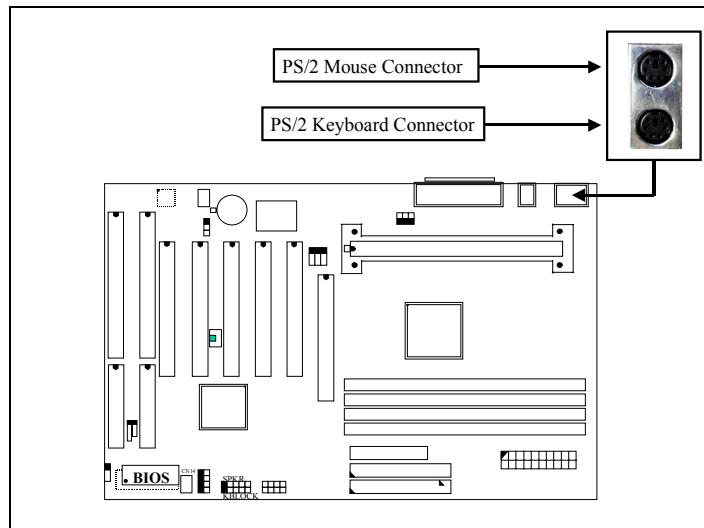
Pin assignment of PS/2 mouse connector:

Pin #	Signal name	Pin #	Signal name	Pin #	Signal name
1	Mouse Data	3	Ground	5	Mouse Clock
2	No Connection	4	+ 5V DC	6	No Connection

Pin assignment of keyboard connector

Pin #	Signal name	Pin #	Signal name	Pin #	Signal name
1	Keyboard Data	3	Ground	5	Keyboard Clock
2	No Connection	4	+ 5V DC	6	No Connection

(C) CN2: USB Port (Universal Serial Bus) Connector
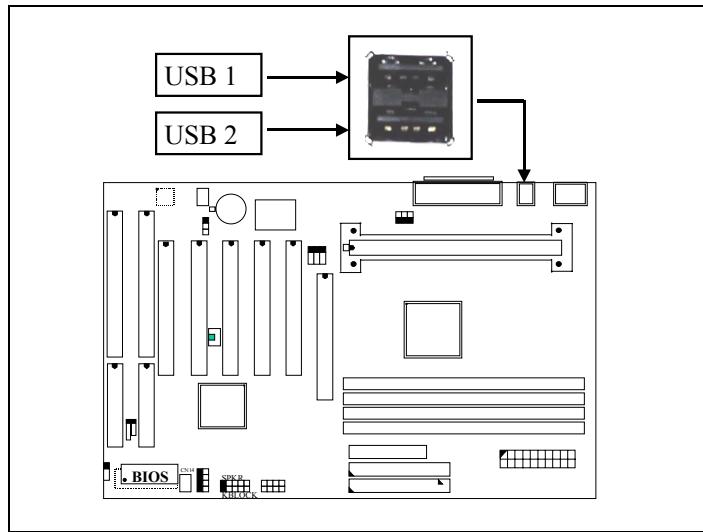
Pin assignment of USB connector:
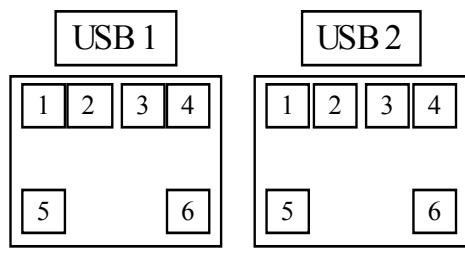

```
Pin1: +5VDC
Pin2: DATA-
Pin3: DATA+
Pin4: Ground
Pin5: Ground
Pin6: Ground
```

(D) CN3 :   COM A connector
(E) CN7 :   COM B connector
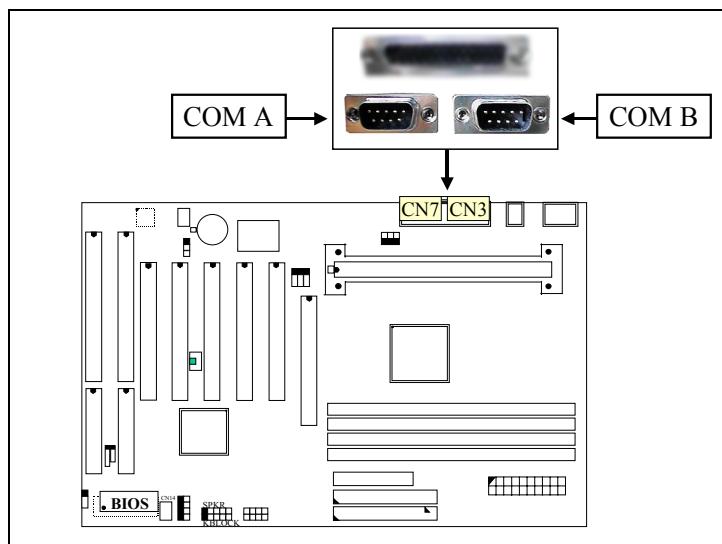
Ping assignment of serial port connector:

1 6	Pin #	Signal name		Pin #	Signal name	
	1	DCD	(Data Carrier Detect)	6	DSR	(Data Set Ready)
	2	RD	(Received Data)	7	RTS	(Request To Send)
	3	TD	(Transmit Data)	8	CTS	(Clear To Send)
	4	DTR	(Data Terminal Ready)	9	RI	(Ring Indicator)
5 9	5	Ground				

I/O address 3F8H/2F8H/3E8H/2E8H, IRQ3/IRQ4, selected by CMOS setup.

(F) CN4: ATX Power Connector

ATX Power connector

Pin assignment of ATX power connector

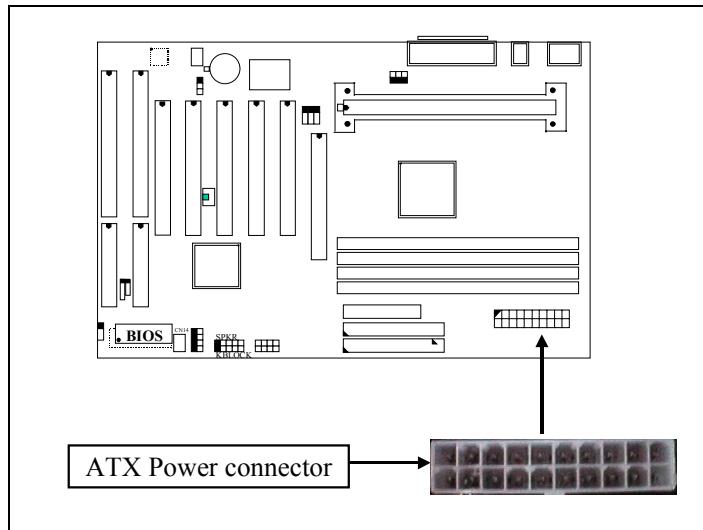| 11	1	Pin #	Signal name	Pin #	Signal name
		11	+ 3.3V DC	1	+ 3.3V DC
		12	- 12V DC	2	+ 3.3V DC
		13	Ground	3	Ground
		14	PS-ON	4	+ 5V DC
		15	Ground	5	Ground
		16	Ground	6	+ 5V DC
		17	Ground	7	Ground
		18	- 5V DC	8	PW-OK
		19	+ 5V DC	9	+ 5V SB
		20	+ 5V DC	10	+ 12V DC
20	10				

(G) CN6: Parallel Port Connector
(Supports SPP/EPP/ECP modes, IRQ7 or IRQ5 is selectable, ECP mode will use either DMA channel 3 or channel 1 which can be selected by the CMOS setup probram)
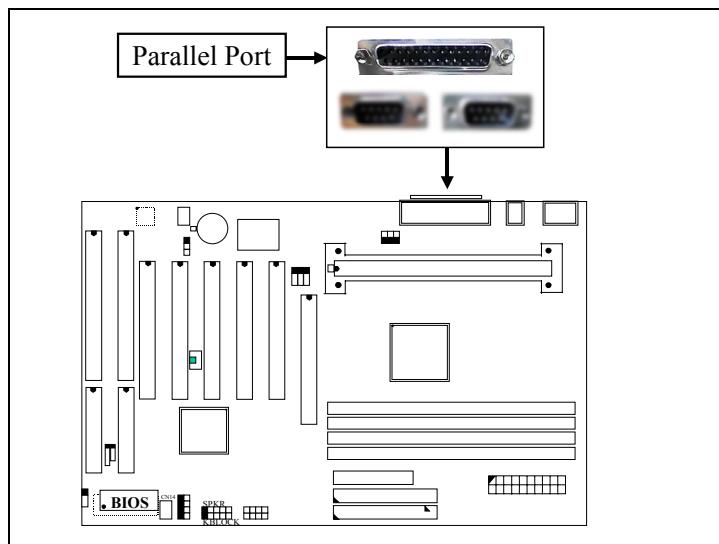
Pin assignment of parallel port:

Pin #	Signal name	Pin #	Signal name
1	STROBE	14	AUTO FEED
2	Data Bit 0	15	ERROR
3	Data Bit 1	16	INIT
4	Data Bit 2	17	SLCT IN
5	Data Bit 3	18	Ground
6	Data Bit 4	19	Ground
7	Data Bit 5	20	Ground
8	Data Bit 6	21	Ground
9	Data Bit 7	22	Ground
10	ACK	23	Ground
11	BUSY	24	Ground
12	PE	25	Ground
13	SLCT		

(H) CN8: CPU Cooling Fan Power Connector

GND   +12V   Fan Sense Signal

CN8

1   2   3
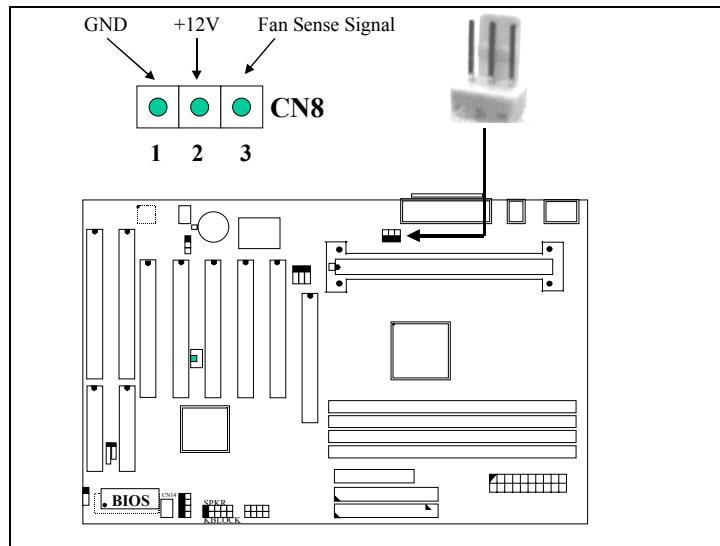
(I)   CN9 : IDE 2 Connectors (Secondary IDE Port: 170H, IRQ 15)
(J)   CN10: IDE 1 Connectors (Primary IDE Port: 1F0H, IRQ 14)

CN9:   IDE 2

CN10: IDE 1
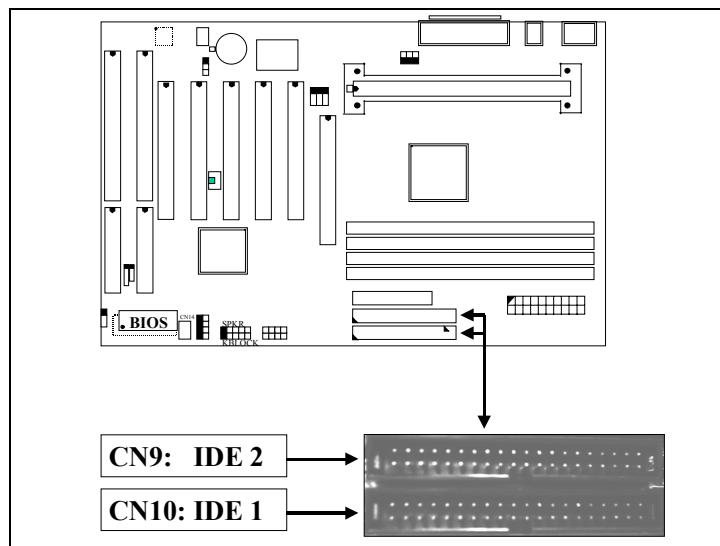
(K) CN11: Floppy Disk Control Port Connector (Using IRQ6, DMA channel 2)

CN11: FDC Connector
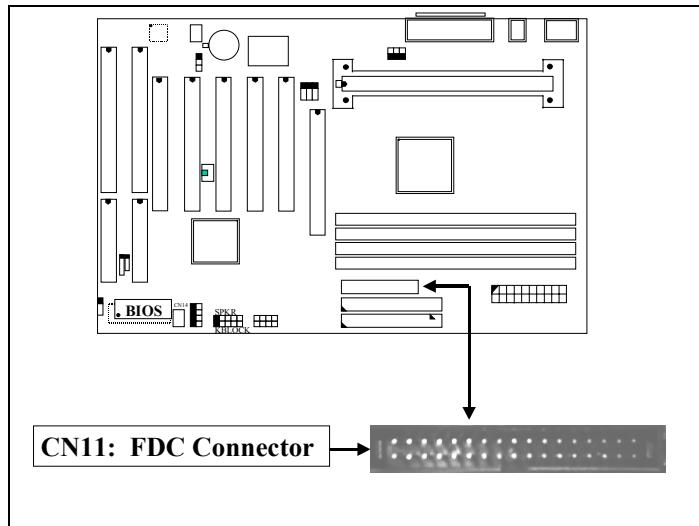
(L) CN12: WOL (Wake On LAN) Connector
In order to use the WOL LAN card to trigger the power of the PC system, the switching power supply must be able to provide at least 700mA current driving ability on the "5V standby" voltage.

CN 12
WOL
1   2   3
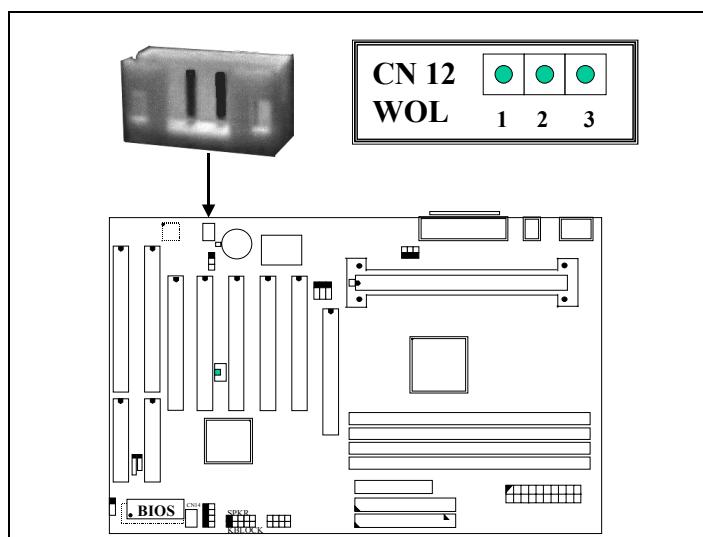
Pin assignment of WOL Connector

1 2 3	Pin #	Signal name	Pin #	Signal name	Pin #	Signal name
	1	5V standby	2	Ground	3	WOL Signal

(M) CN13: SB-LINK Connector
(For PCI bus sound cards. such as Creative™ Labs EMU8008 sound chip)
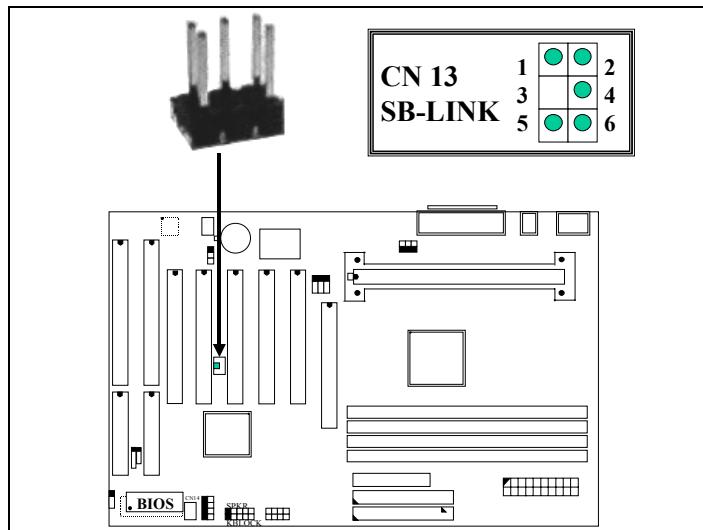
Pin assignment of SB-LINK Connector:

Pin #	Signal name	Pin #	Signal name
1	GNT#	2	Ground
3	Key	4	REQ#
5	Ground	6	SERIRQ

(N) CN14: Chassis Fan Power Connector (optional)
(this connector is available only when LM78 or LM79 is installed on the board)

1 Ground

2 +12V DC

3 Fan Sense Signal

CN 14 Chassis Fan Power Connector
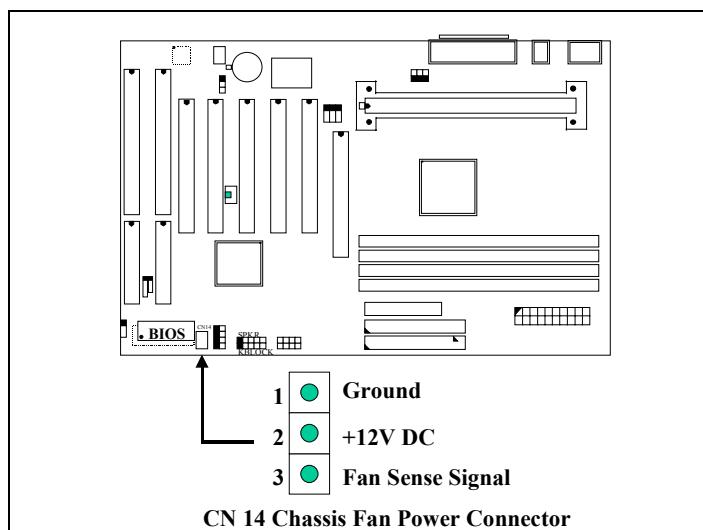
(O) CN15: IR / FIR (Infrared Rays) Connector

Consumer IR Connector (Consumer IR connector is active only when W83977CTF-AW I/O Chip is installed on position U11)

IR/FIR (INFRARED RAYS) CONNECTOR   CONSUMER IR CONNECTOR

(+5VDC)	1A		1B	(+5VDC)
(NO CONNECTION)	2A		2B	(IR TRANSMIT)
(IR RECEIVE)	3A		3B	(CONSUMER IR RECEIVE)
(GROUND)	4A		4B	(GROUND)
(IR TRANSMIT)	5A			
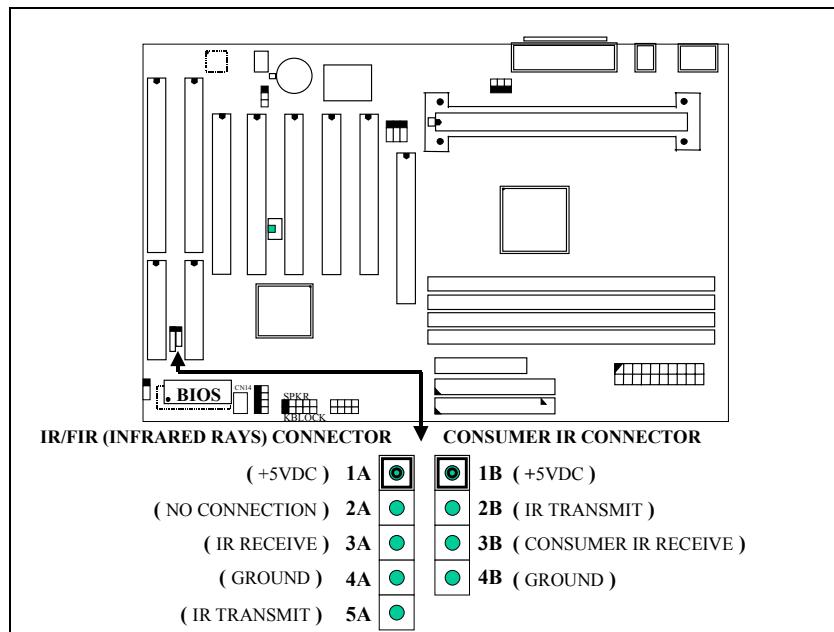
CN 15 IR CONNECTOR

(P) Push buttons and LED connectors

A series of connectors are designed on the board to connect the push buttons and LED indicators. Followings are the details:

RS: Reset Button connector
HL: HDD LED connector
SL: Sleep LED connector
PW: Power On / Off Suspend switch

PW SL HL RS

PUSH BUTTONS AND LED CONNECTORS
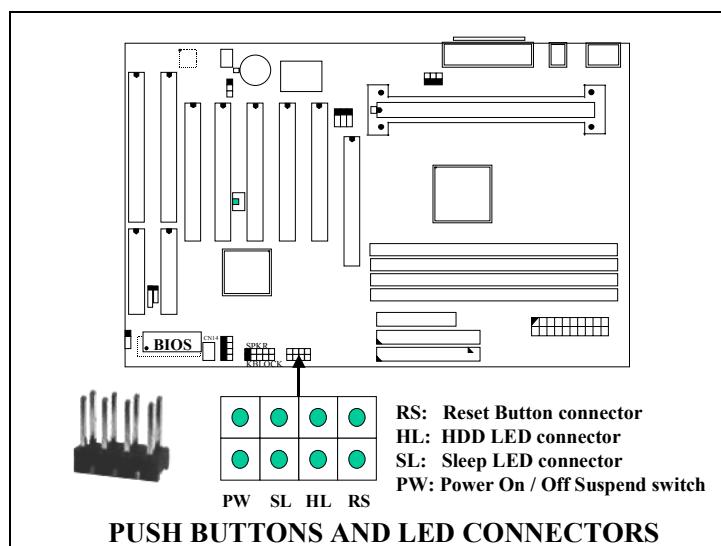
1. **RS**   Reset Button Connector

Pin #	Signal name	Pin1&2	Function
1	Reset Control	Open	No action
2	Ground	Short	System Reset

2. **HL**   IDE HDD LED Connector

Pin #	Signal name
1	+ 5V DC Pull-up
2	HDD Active Signal

3. **SL**   Sleep LED Connector

    This LED will be lightened when the AC power is connected and the system is power off, darkened when the AC power is disconnected or the system is powered on.

Pin #	Signal name
1	Signal Pin
2	Ground

4. **PW**   Power On / Off and External Suspend Switch Connector

    According to the setup in CMOS, the PW connector has two functions. It can be the Power Switch or Suspend Switch of your PC system.
    (please refer to Section- 4.7 and section 4.8 for BIOS setup)

    ① **If the setup in CMOS is "Delay 4 Sec.", the function of "PW" will be**:
    A. When system is power off :
    Press this switch, the system will power on. (when "password" is selected in the CMOS setup program, you will be unable to use the PW button to turn on the power of the PC system, please see Section 2.2 and Section 4.8 for more details.)

    B. When system power is on :
    a. The system is in Full-ON mode :
    a-1. Click on this switch (less than 4 seconds), the system will be turned into Suspend mode. (turn into the GREEN mode)
    a-2. Press and hold this switch for more than 4 seconds, the system will be powered off.

b. When the system is in Suspend mode :
    b-1. Click on this switch (less than 4 seconds), the system will
          return to Full-ON mode.
    b-2. Press and hold this switch more than 4 seconds, the system will
          be powered off.

② **The setup in CMOS is "Instant-off":**
   A. When system power is off :
      Click on this switch, the system will be powered on. (when
      "password" is selected in the CMOS setup program, you will be
      unable to use the PW button to power on the PC system, please see
      Section 2.2 and Section 4.8 for more details.)

   B. When system power is on :
      Click on this switch, the system will be powered off instantly.

(Q) Speaker and Key Lock connector:

SPKR & KBLOCK CONNECTORS
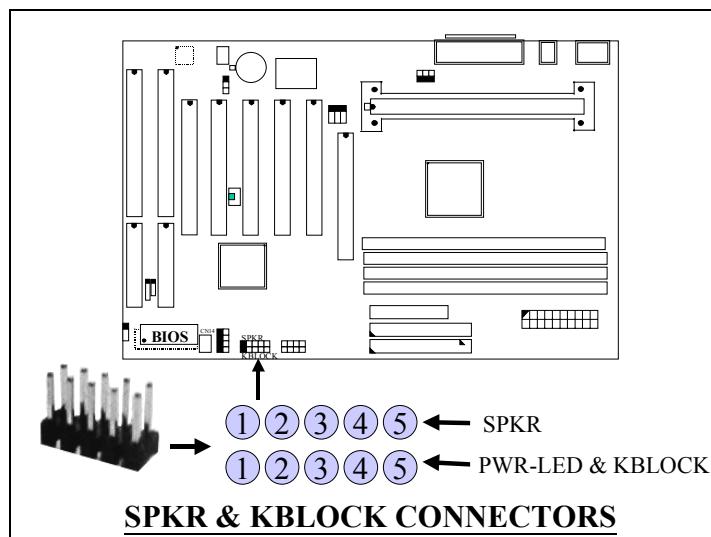
(X) SPKR: Speaker connector

Pin #	Signal name
1	+ 5V DC
2	No Connection
3	No Connection
4	Speaker Data Signal
5	No Connection

(R) PWR-LED & KBLOCK: Front Panel Power LED and Key-Lock Connector

Pin #	Signal name
1	Pullup (+ 5V DC for Power LED)
2	No Connection
3	Ground
4	Keyboard Lock
5	Ground

3.4 JUMPERS

This section will discuss the jumper setting on the mainboard. In order to let you have better idea of the jumper setting, please see below for the explanation of jumper settings before you start this section.

open ⇨ [○ ○] [○ ○ ○] , short ⇨ [● ●]
          1   1   1

1-2 ⇨ [● ● ○]   2-3 ⇨ [○ ● ●]
          1   1
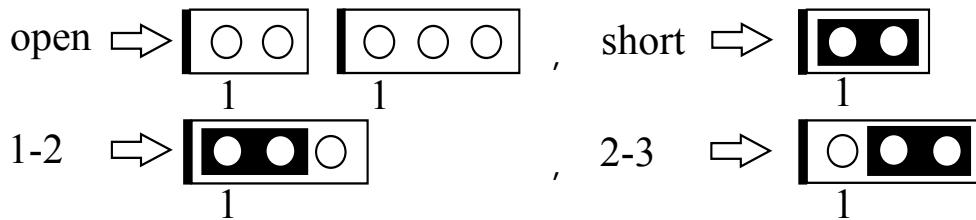
The following jumpers which labeled with "optional" means they are the optional choice for customers and the related components are normally not populated on the mainboard. In order to make the mainboard works properly in your PC system, please make sure all jumper settings are at correct before installing this mainboard.

A jumper is a set of two, three or more jumper pins which allows users to make different system configuration by putting the plastic connector plug (mini-jumper) on it. The jumper setting is necessary when installing different components onto the mainboard.

(A) JP1: K/B & Mouse OnNow Selection

This jumper allows you to Enable / Disable the Keyboard OnNow function. When enabled, you may use keyboard or PS/2 mouse key click to power on the PC system:

Pin1 & Pin2 Short: OnNow Disabled   **JP11** ① ② ③

Pin 2 & Pin3 Short: OnNow Enabled   **JP11** ① ② ③
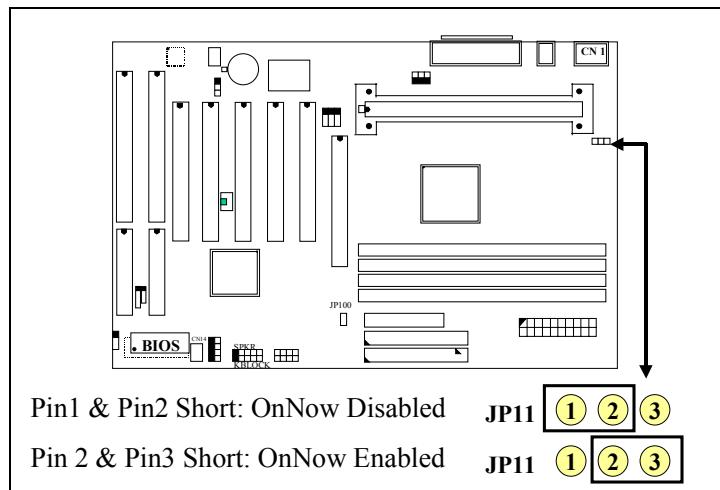
(B) JP4: Clear CMOS Data Button

```
1
2
3
Normal Setting
```

```
1
2
3
Clear CMOS
```
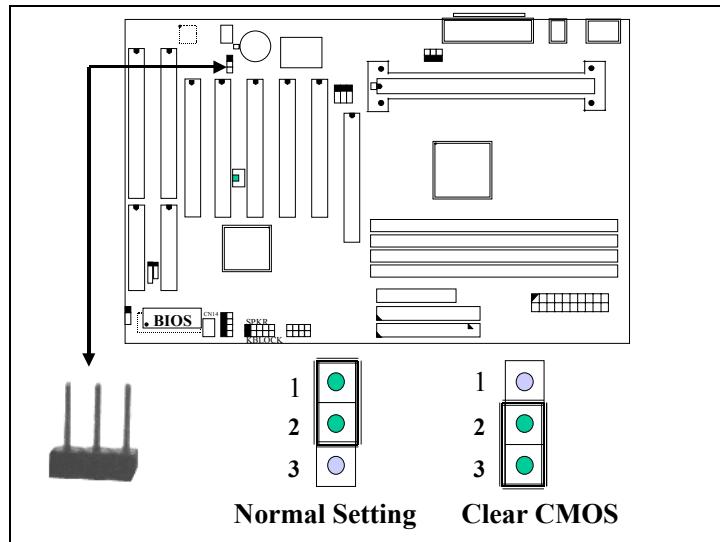
Note: Improper BIOS setting may cause hang-up to the PC system, Should it be happened, you may use JP4 to clear the information which is stored in the CMOS memory and get the PC system back to normal. Improper connection may cause permanent damage to the mainboard. Please refer to the following steps to clear the CMOS

   1. Unplug the AC power cable from the PC system.

   2. Put the mini jumper on pin 2-3 of JP4 around 3 to 5 seconds and then return it to the original position (pin 1-2).

   3. Re-connect the AC power cable.

(C) JP5, JP6, JP7 and JP8: CPU Speed Selection
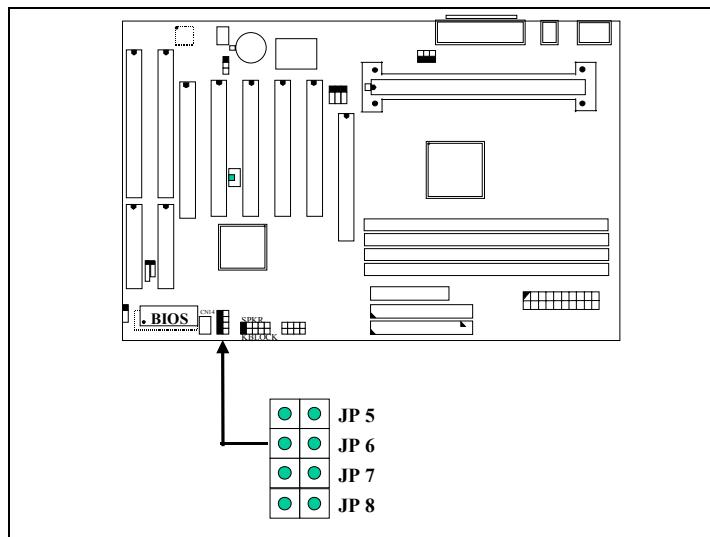
JP5, JP6 JP7 and JP8: These jumpers allow you to select CPU clock ratio .

CPU (MHz)	CLK Ratio	JP5	JP6	JP6	JP8
233, 350	3.5X	OPEN	OPEN	SHORT	SHORT
266, 400	4.0X	SHORT	SHORT	OPEN	SHORT
300, 450	4.5X	OPEN	SHORT	OPEN	SHORT
333, 500	5.0X	SHORT	OPEN	OPEN	SHORT
366, 550	5.5X	OPEN	OPEN	OPEN	SHORT
400, 600	6.0X	SHORT	SHORT	SHORT	OPEN
433, 650	6.5X	OPEN	SHORT	SHORT	OPEN
466, 700	7.0X	SHORT	OPEN	SHORT	OPEN
500, 750	7.5X	OPEN	OPEN	SHORT	OPEN
533, 800	8.0X	SHORT	SHORT	OPEN	OPEN

Note: 6.0X~8.0X selection is optional on some PT-6IBP and PT-6IZP mainboard.
Please don't worry about it, because only Celeron will use those clock ratios and the clock ratio of Celeron is decided by CPU itself. The jumper setting can not change the clock ratio when Celeron processor is installed on the mainboard.

(D) JP10: CPU Voltage Range Selection (Optional)

JP10 is a special design on the mainboard which allows you to select the CPU voltage range (Vcore) for the Pentium II/III processors.

The voltage regulator on the mainboard will generate 1.3V ~ 3.5V DC to support different processors. Basically, Most Pentium II mainboards will use the VID signal (VID0~VID4) from the processor to decide the proper CPU voltage (Vcore). In case that there is the poor connection between Slot 1 connector and CPU, or uninstall the CPU from the mainboard while the system power is "ON". Under such circumstance, mainboard may receive wrong VID signal and send wrong Vcore to the CPU. Unfortunately, wrong Vcore may destroy the CPU.

JP10 is designed to control the Vcore within the safe range so that it won't make any damage to the CPU because of wrong VID signal.

Since most Pentium II/III processors require the Vcore below 2.05V except few Pentium II processors. So the default setting of JP10 will limit the Vcore at 1.3V~2.05V. Please do not change the setting on JP10 unless your CPU needs the voltage higher than 2.05V.

OPEN: Vcore = 1.3V ~ 2.05V

SHORT : Vcore = 1.3V ~ 3.5V.
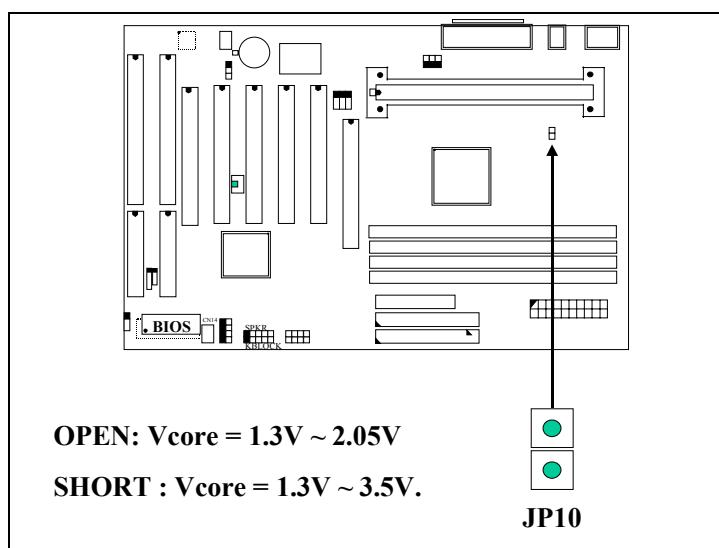
JP10

(E) JP100: Over Clock Selection

JP100 is designed on the board for some special purpose. *(Please do not attempt to change this setting unless you are the technician)*. Please refer to the following for functional description..
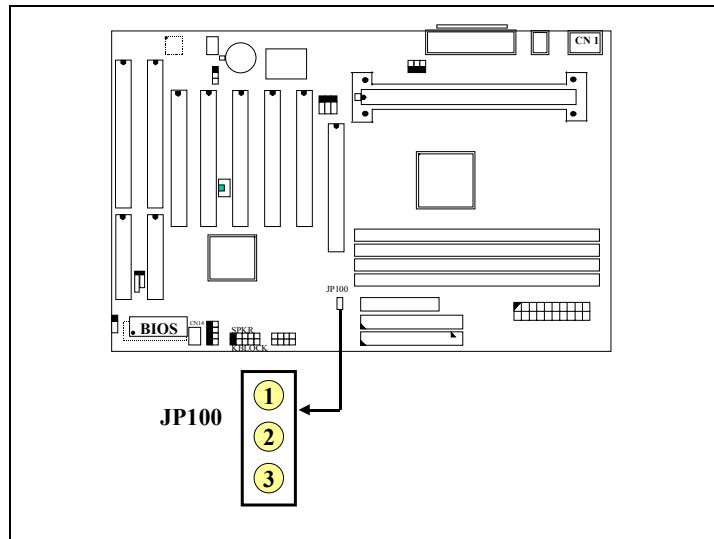
When there is the mini-jumper on Pin1 & Pin2:

This mainboard will detect the CPU type and assign the proper FSB clock for the processor automatically.

When there is the mini-jumper on Pin2 & Pin3:

This mainboard will force the CPU to use 66MHz as the FSB clock.

When there is no mini-jumper on JP100:

This mainboard will force the CPU to use 100MHz as the FSB clock.

3.5 HOW TO SELECT THE CPU SPEED

Basically, there are two parameters which will decide the CPU speed - the Front Side Bus (FSB) speed and CPU clock ratio. When you have installed the processor on the mainboard, the system BIOS will detect the CPU type and decide the FSB speed automatically (please refer to **section 4-6**.). As for the clock ratio, the setting of clock ratio will be different on Pentium™ II and Celeron™ processors, Please refer to following for details:

Celeron™ Processor:
   The clock ratio is fixed in Celeron™ processor, so we will be unable to select other clock ratio for the Celeron™ processor. In other word, the jumper setting on JP5 ~ JP8 will make no change on the clock ratio.

   Once we have installed the Celeron™ processor onto the mainboard, the clock ratio is decided already. So all we can do is use the BIOS setup program to select the FSB clock for the CPU. Basically, "Default" setting is recommended because it will detect the CPU type and select the proper FSB clock for the CPU. When "Default" is selected in the BIOS setup program, you don't have to do any setting when installing the Celeron™ processor. Simply plug and play immediately (Of course, you can select other FSB clock for the Celeron™ processor and the performance will be different to the "Default" setting.

Pentium™ II Processor:
   The following formula is the simple rule to calculate your CPU frequency:

> **FSB Clock x Clock Ratio = CPU Frequency**

SELECTION OF FSB CLOCK (please refer to section 4.6)
   Most of the time, you don't have to do anything to select the FSB clock, because the system BIOS will do the job for you.

   Different Pentium™ II processors have the different FSB clock. When you have installed the processor onto this mainboard, the system BIOS will detect the type of the processor and decide the proper FSB clock automatically. (Same as above, you can select other FSB clock in the BIOS setup program) For detail information of your Pentium™ II Processor, please refer to the CPU data sheet or confirm with your CPU dealer.

HOW TO SELECT THE CPU CLOCK RATIO:
   Modify the formula mentioned in previous page and we will get:

> **CPU Frequency ÷ FSB Clock = Clock Ratio**

   Now we can use the formula above to calculate the CPU clock ratio. Please refer to the following illustration for the calculation:

For example, if you are installing the 400MHz Pentium™ II processor onto the mainboard. Suppose that you have known that the FSB clock for Pentium™ II-400 processor is 100MHz.

Now you may introduce these parameters into the formula and get:

400MHz(CPU Frequency) ÷ **100MHz** (FSB Clock) = **4.0X** (Clock Ratio)

According to the example above, you can see that it is very easy to calculate the CPU clock ratio when you have the information of your information of CPU frequency and its FSB speed. In order to let you have a better picture of the calculation, the procedures are summarized as following:

1. Check the data sheet for your CPU frequency.
2. Check the data sheet and get the FSB clock of your CPU.
3. Use the following formula to calculate the CPU clock ratio.

CPU Frequency ÷ FSB Clock = Clock Ratio

3.6 INSTALLATION OF DEVICE DRIVERS

There is a CD which comes with the mainboard. The CD contains the device drivers which is necessary when installing the mainboard. Please refer to the following procedures to install the device drivers.

A. Install the IDE driver:
(You don't have to install this driver if you are installing Windows 98. This driver is designed for Windows 95 and Windows NT only)

Step 1. Insert the CD into the CD ROM drive.
Step 2. Change the directory to "\Driver\mainboard\Intel\IDE Driver "
Step 3. See "README.TXT" and choose the OS to install the device driver.

B. Install PCI Bridge:
(You don't have to install this driver if you are installing Windows 98. This driver is designed for Windows 95 only)

Step 1. Insert the CD into the CD ROM drive.
Step 2. Change the directory to "\Driver\mainboard\Intel\Utility "
Step 3. Run " WINP2X4.EXE" and follow the screen instruction to complete the installation.

C. Install the Hardware Monitoring Program: *(optional)*
The hardware monitoring is optional on the mainboard. When you found the Winbond W83783S is installed on U17, you may use the following procedure to install the hardware monitoring program and it will monitor your system healthy status.

Step 1. Insert the CD into the CD ROM drive.
Step 2. Select directory "\Driver\mainboard\Hardware Monitoring\W83783S"
Step 3. Run "SETUP.EXE" to install the hardware monitoring program.

4.   AWARD BIOS SETUP

4.1 GETTING STARTED

When the system is first time powered on or reset by user, the system BIOS will enter the Power On Self Test routines (POST, which will display a copyright message on the screen and execute a diagnostics and initialization procedure.) In case that there is any error or malfunction detected, the BIOS will give a series of beeping sound or display the error message on screen.

When the system is normal, the simulate figure *Fig. 4-1* will be displayed on the screen when the system is powered on.


```
● Award Modular BIOS v4.51PG , An Energy Star Ally
  Copyright (C)  1984-97, Award Software, Inc.

xx/xx/xx  xxxxxxx

xxxxxxx  CPU  at  xxxMHz

Memory Test :   xxxxxxK  OK

Award Plug and Play BIOS Extension  v1.0A
Copyright (C) 1997, Award Software, Inc.




                                                            EPA POLLUTION PREVENTER




Press DEL to enter SETUP, ESC to skip memory test
xx/xx/xx-i440LX-xxx-2A69JXXXC-00
```
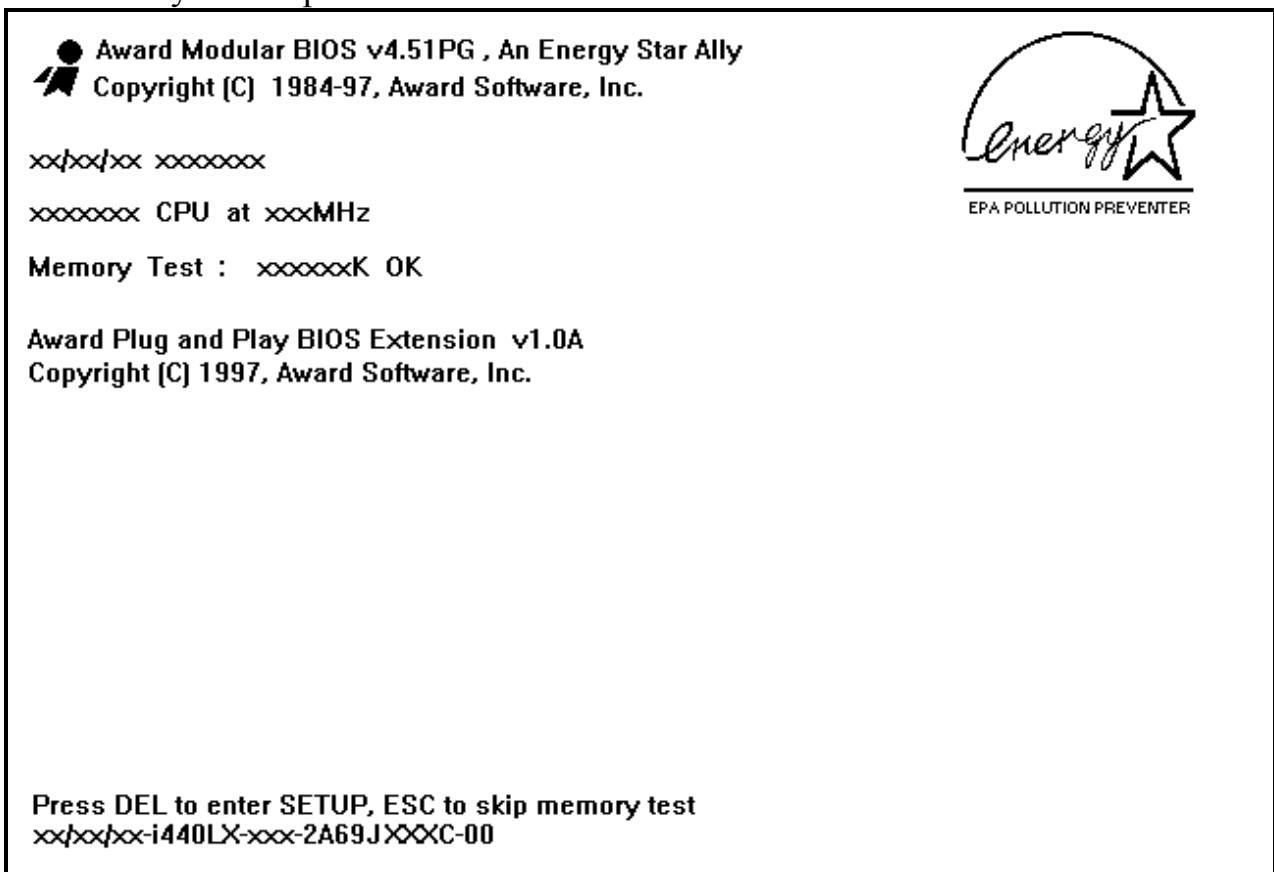
Fig. 4-1 Initial Power-On screen.

During the power on self testing (POST), the following message appears at the lower left corner of the screen:

" Press **DEL** to enter SETUP "

To execute the Award® BIOS CMOS Setup program, please press the **DEL** key. The STANDARD CMOS SETUP screen as shown in figure Fig. 4-2 will be triggered:

4.2 MAIN MENU

ROM PCI / ISA BIOS (2A69KXXX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	HDD LOW LEVEL FORMAT
INTEGRATED PERIPHERALS	SAVE & EXIT SETUP
PNP/PCI CONFIGURATION	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	

ESC : Quit   : Select Item
F10 : Save & Exit Setup   (Shift)F2 : Change Color

Time, Date, Hard Disk Type ...

Fig. 4-2 CMOS SETUP MAIN MENU screen.

4.3 CONTROL KEYS

Listed below is the explanation of the keys displayed at the bottom of the screens which will be used in the CMOS SETUP program :

Arrow Keys : Use the arrow keys to move the cursor to the desired item.
Enter : Select the desired item.
F1 : Display the help screen for the selected feature.
(Shift)F2 : To change the screen color, total 16 colors.
ESC : Exit to the previous screen.
PgUp(-)/PgDn(+) : To modify or change the content of the highlighted item.
F5 : Retrieves the previous value from CMOS data, (only the current page setup will be retrieved).
F7 : Loads the SETUP default values from BIOS default table, (only the current page setup will be loaded).
F10 : Save all changes to CMOS RAM from the MAIN MENU

4.4 STANDARD CMOS SETUP

ROM PCI / ISA BIOS (2A69KXXX)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

```
Date (mm : dd : yy)  : Mon,   [Apr]  20  1998
Time (hh : mm : ss   : 16  :  03  :  33

 HARD  DISKS       TYPE   SIZE   CYLS   HEAD   PRECOMP   LANDZ  SECTOR  MODE
Primary  Master     Auto     0       0       0        0         0        0      Auto
Primary  Slave      None     0       0       0        0         0        0      ------
Secondary  Master   Auto     0       0       0        0         0        0      Auto
Secondary  Slave    None     0       0       0        0         0        0      ------

 Drive  A  :  1.44M,  3.5  in.
 Drive  B  :  None                         Base  Memory :    640 K
 Floppy 3 Mode Support: Disable       Extended  Memory :  xxxxxx K
 Video    :  EGA/VGA                      Other  Memory :  xxxxxx K
 Halt  On  :  All  Errors                 Total  Memory :  xxxxxx K

 ESC :  Quit                    :  Select  Item      PU/PD/+/-  :  Modify
 F1 :  Help              (Shift)F2 :  Change  Color
```

Fig. 4-3 STANDARD CMOS SETUP screen.

MODE :
   The BIOS on the mainboard is the updated one and which provides three different modes to support both normal IDE HDD and the one which is above 528MB:

➢ NORMAL : For IDE hard disk drives which is smaller than 528MB.
➢ LBA   : For IDE hard disk drive which is above 528MB (ideally, it can be as big as 8.4GB) that use Logic Block Addressing (LBA) mode.
➢ Large   : For IDE HDD which is above 528MB and does not support LBA mode.
➢ Auto   : This mode will auto-detect your IDE driver during boot-up.

   Note :   1. "large mode" may not be fully supported by all operation systems.
                      It is suggested to be used with the MS-DOS but such hard disk drive
                      is not very popular nowadays.
                   2. Some certain operation systems (such as SCO®-UNIX™),
                      only "NORMAL mode" is allowed when installation.)

Floppy 3 Mode Support: (Default setting: disabled)
This mode is for the Japanese 3.5 inch high capacity floppy disk drive. If you have such drive installed in your PC system, please select enable, otherwise, use the default setting.

4.5 BIOS FEATURES SETUP

ROM PCI / ISA BIOS (2A69KXXX)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Processor Number Feature	: Disabled	D4000-D7FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D8000-DBFFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	DC000-DFFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled		
Boot Up Floppy Seek	: Enabled		
Boot Up NumLock Status	: On		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup	ESC : Quit $\qquad$: Select Item	
PCI/VGA Palette Snoop	: Disabled	F1 : Help $\quad$ PU/PD/+/- : Modify	
OS Select For DRAM > 64MB	: Non-OS2	F5 : Old Values $\quad$ (Shift)F2 : Color	
Report No FDD For Win95	: NO	F7 : Load Setup Defaults	
PS/2 mouse function control	: Enable		

Fig. 4-4 BIOS FEATURES SETUP screen.

Virus Warning :

Basically, The default setting of this feature is "Disabled" In order to avoid virus infection happens on your PC system, This mainboard provides the virus warning features in the BIOS. During and after the operation system is loaded, any attempt to write to the boot sector or partition table on the IDE hard disk drive will trigger this feature and give you some warning messages on the screen and then halt the system. When you find the message on your screen, please run the anti-virus program to see whether your system is infected by a virus or not.

Enabled : A warning message will be displayed on the screen when something attempts to access the boot sector or hard disk partition table.

Disabled : No warning message will appear on the screen when anything attempts to access the boot sector or hard disk partition table.

CPU Internal Cache / External Cache : (default setting: Enabled)
These fields allow you to turn on or turn off the Level 1 and Level 2 cache that built-in Pentium™ II or Celeron™ processors.

CPU L2 Cache ECC Checking: (default setting: Enabled)
This option will enable or disable the ECC checking on the CPU L2 cache. The ECC checking will ensure the accuracy of the data stored on the L2 cache.

Processor Number Feature: (default setting: Disabled)
This selection option is valid only when Pentium III processor is installed on the mainboard. There is the serial number in each Pentium III processor and that will be use as an ID of your computer. When enabled, the ID can be accessed by some certain software program and it will be used as your personal information.

Quick Power on Self Test: (default setting: Enabled)
The Quick Power On Self Test will skip some test and speed up the boot process. If you find the system is working normally, you can always enable this feature so that you don't have to wait too long on the POST.

Boot Sequence : (default setting: A,C,SCSI))
This field allows you to use some other device to load the operating system. The options available are "A,C,SCSI", "C,A,SCSI", "C,CDROM,A", "CDROM,C,A", "D,A,SCSI", "E,A,SCSI", "F,A,SCSI", "SCSI,A,C", "SCSI,C,A", "C only" and "LS/ZIP,C".

Swap Floppy Drive : (default setting: Disabled)
When enable this option, the device name of the floppy drives will be swapped, For example, drive A will be treated as drive B, and drive B as Drive A.

Security Option : (default setting: Setup)
This selection field allows you to select how to secure the PC system for you. There are two choice selectable - "Setup" and "System". Before you can apply the security option to your PC system, you have to select your own ""Supervisor Password" or "User Password" in the BIOS setup program.

When "Setup" is selected, you will have to input your "Passwords" before you can start the BIOS setup program. When you select "System", you will be unable to load the operation system if you don't key-in your personal "password"

PCI/VGA Palette Snoop : (default setting: Disabled)

>   Some display cards are non-standard VGA card (such as graphics accelerator or MPEG Card) which may not display color properly on your screen. "Enable" the setting in this field may correct this problem. Please leave it "Disabled" as the default setting shown above if you are using the normal display card.

OS Select For DRAM > 64MB : (default setting: Non-OS/2)

>   When you are using the "OS/2™" operating system and the system memory is more than 64MB, you will have to select the setting to "OS2", otherwise, leave this on the default setting "Non-OS2" for all other operating systems.

PS/2 mouse function control : (default setting: Enabled)

>   This mainboard built-in a PS/2™ mouse port, In case that you prefer to connect your mouse to the serial port instead of using the PS/2™ mouse, you may choose "Disable" in this field so that the IRQ12 can be released for the other devices; If you are using the PS/2™ mouse, leave this field "Enabled".

4.6 CHIPSET FEATURES SETUP

ROM PCI / ISA BIOS (2A69KXXX)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

CPU Host/PCI Clock	: Default		
SDRAM RAS-to-CAS Delay	: 3	CPU Warning Temperature	: 70 /158
SDRAM PAS Precharge Time	: 3	Current System Temp.	: xx / XXX
SDRAM CAS Latency Time	: 3	Current CPU Temperature	: xx / XX
DRAM Data Integrity Mode	: Non-ECC	Current CPU Fan Speed	: xxxx RPM
System BIOS Cacheable	: Disabled	Current Chassis Fan Speed	: xxxx RPM
Video BIOS Cacheable	: Disabled		
8 Bit I/O Recovery Time	: 1	VccCore :x.xxV 3V-STBY : .xxxV	
16 Bit I/O Recovery Time	: 1	+3.3 :x.xxV +5V : x.xxV	
Memory Hole at 15M-16M	: Disabled	+12V :xx.xxV -12V : -xx.xxV	
Passive Release	: Enabled	-5V :-x.xxV	
Delayed Transaction	: Disabled		
AGP Aperture Size (MB)	: 64	ESC : Quit : Select Item	
Auto Detect DIMM/PCI Clk	: Enabled	F1 : Help PU/PD/+/- : Modify	
Spread Spectrum Modulated	: Disabled	F5 : Old Values (Shift)F2 : Color	
		F7 : Load Setup Defaults	

Fig. 4-5 CHIPSET FEATURES SETUP screen.

WARNING : *The selection fields on this screen are provided for the professional technician who can modify the Chipset features to meet some specific requirement. If you do not have the related technical background, do not attempt to make any change except the following items.*

CPU Host/ PCI Clock: (Default setting: "Default")

This selection field is used to decide the CPU FSB clock. Basically, this mainboard is designed by Intel 440BX/ZX AGPset and it supports both the 100MHz and 66MHz FSB frequency. When you select "default" setting, the system BIOS will detect the CPU type and decide the FSB clock automatically. You may also use this field to select different FSB clock and force your CPU to run at higher speed. (be sure to make sure your system devices are fast enough before you can change to such setting)

When you have decided the FSB clock, you will have to use JP5, JP6, JP7 and JP8 to select the CPU clock ratio to decide the CPU speed. please refer to Section 3.4 for details of the jumper settings..

Beside the "Default" FSB selection, this mainboard also provides the manual option for your choice. When you have installed the 66MHz FSB processor, the selection available will be 66, 68 and 75 MHz. (when JP100 is enabled, you will see the100, 103 and 112 MHz selections) When you have installed the 100MHz FSB processor, the selection available will be 100, 103 and 112 MHz. ***The higher FSB frequency will surely give you the higher system performance. However, it is not recommended because it may cause the system unstable, especially the component like DRAM, HDD, Add on card is not fast enough.***

 Note: In order to make sure the system will always working normally. The CPU frequency will be changed to the "default setting after you clear the CMOS data.

SDRAM Speed Selection :

Below the "**CPU Host/ PCI Clock**" field, there are the selection fields which allow you to select parameters for your DRAM sub-system. Use these fields to configure the DRAM parameter properly will give you the best performance. However, improper setting on these fields will make your PC system become extremely unstable. Basically, please do not attempt to make the change on these fields unless you are the professional technician.

The Parameters shown on the previous page are the default setting and they are the optimal values suggested for the chipset and CPU registers. These parameters may not be able to let you have the best performance, but it will let you have the best reliability.

System BIOS Cacheable: (default setting : "Disabled")
     Select Enabled allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Enabled	BIOS access cached
Disabled	BIOS access not cached

Video BIOS Cacheable: (default setting : "Disabled")
     Selecting *Enabled* allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

Enabled	Video BIOS access cached
Disabled	Video BIOS access not cached

8 Bit I/O Recovery Time: (default setting : "1")
     The recovery time is the length of time, measured in CPU clocks, which the system will delay after the completion of an input/output request. This delay takes place because the CPU is operating so much faster than the input/output bus that the CPU must be delayed to allow for the completion of the I/O. This item allows you to determine the recovery time allowed for 8 bit I/O. Choices are from NA, 1 to 8 CPU clocks

16 Bit I/O Recovery Time: (default setting : "1")
     This item allows you to determine the recovery time allowed for 16 bit I/O. Choices are from NA, 1 to 4 CPU clocks

Memory Hole At 15M-16M: (default setting : "Disabled")
In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB.

Enabled	Memory hole supported.
Disabled	Memory hole not supported.

Passive Release: (default setting: "Enabled")
When Enabled, CPU to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM..
The Choice: Enabled, Disabled

Delayed Transaction: (default setting: "Disabled")
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 Choice: Enabled, Disabled.

AGP Aperture Size (MB) : (default setting: 64MB)
There is the AGP slot on the board and which allows user to install the AGP display card in the system. The AGP display card will use some of the system memory to store 3D texture mapping data so that the video performance can be increased tremendously. You may use this field to define the memory size which you prefer to use with the AGP card. The memory size selectable in this field can be 4MB to 256MB.

It seems that the default setting –64MB is huge. In fact, what is defined in the BIOS selection is to tell the operation system the maximum memory can be shared by AGP card to store the 3D texture mapping data. So you need not to worry that your system memory will be insufficient. The larger aperture size will let you have the better performance on 3D Video display.

There is the VGART.VXD utility comes with the AGP card and it will decide the actual memory size which will be shared by AGP card. If you are installing the Windows 98 operating system, the feature are already supported by the OS and you can select the memory for the AGP Aperture size.

Auto Detect DIMM/PCI Clk: (default setting : "Enable")

When "Enabled" is selected, the mainboard will detect the presence of devices on DIMM and PCI slots. When there is no device presented, the clock on the related DIMM and PCI slot will be disabled to reduce the electro magnetic interference (EMI).

Spread Spectrum: (default setting : "Disable")

When you select "Enabled", the special feature designed in the system chipset will be triggered and reduce the EMI as mentioned above.

CPU Warning Temperature : (*Optional*)

The "Hardware Doctor™" – Winbond W83781D or W83783S is optional on the mainboard. When they are installed on the mainboard, you may use this field (and the fields below) to monitor the healthy status of your PC system. *These selection fields can not be seen on this screen unless you have the Winbond W83781D installed on the board and you have enable the "Throttle Duty Cycle" in the "Power Management Setup" (please see section 4.7)*

There is a CD comes with the mainboard and you will find the hardware doctor program in the CD. When you have installed the hardware doctor, it will keep monitoring the CPU temperature, Cooling fan speed, system voltage … etc. Whenever it detects the abnormal condition occurs, it will give you the warning message or slow down the CPU to avoid system damage.

The following events appears only when the hardware monitoring is installed
****

CPU Warning Temperature : (*Valid when W83781D is installed*)

The hardware monitoring device – Winbond W83781D/W83783S is optional on the mainboard. When they are installed on the mainboard, you may use this field (and the fields below) to monitor the healthy status of your PC system. *These selection fields can not be seen unless you have the W83781D/W83783S installed on the board and you have enable the "Throttle Duty Cycle" in the "Power Management Setup" (see section 4.7)*

There is a CD comes with the mainboard. You will find the hardware monitoring program in the CD. When you have the hardware monitoring software installed in your PC system, it will let you have a bodyguard in your PC system and it will keep monitoring the CPU temperature, Cooling fan speed, system voltage … etc. Whenever it detects the abnormal condition occurs, it will give you the warning message or slow down the CPU to avoid serious damage to the PC system.

Current CPU Temperature: (*Valid when W83781D or W83783S is installed* **)**
Current CHASSIS FAN Speed: (*Valid when W83781D or W83783S is installed* **)**
Current CPU FAN Speed: (*Valid when W83781D or W83783S is installed* **)**
System Voltages: (*Valid when W83781D or W83783S is installed*)

These items shown above indicate the status of system healthy status. Such information will be used by the hardware monitoring program which comes with the mainboard.

Shutdown Temperature: (*Valid when W83781D or W83783S is installed* **)**

The PC system will be shutdown when reach to the given temperature defined in this field so that the CPU can be protected from damage.

4.7 POWER MANAGEMENT SETUP

ROM PCI / ISA BIOS (2A69KXXX)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: User Define	** Reload Global Timer Events **	
PM Control by APM	: Yes	IRQ [3-7 , 9-15], NMI	: Enabled
Video Off Method	: Blank Screen	Primary IDE 0	: Disabled
Video Off After	: Standby	Primary IDE 1	: Disabled
MODEM Use IRQ	: 3	Secondary IDE 0	: Disabled
		Secondary IDE 1	: Disabled
Doze Mode	: Disable	Floppy Disk	: Disabled
Standby Mode	: Disable	Serial Port	: Enabled
Suspend Mode	: Disable	Parallel Port	: Disabled
HDD Power Down	: Disable		
VGA Active Monitor	: Disabled		
Soft-Off by PWR-BTTN	: Instant – off.		
CPUFAN Off In Suspend	: Enabled		
Resume by Ring or LAN	: Enabled		
Resume by Alarm	: Disabled	ESC : Quit	: Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
Throttle Duty Cycle	: 62.5%	F7 : Load Setup Defaults	

Fig. 4-6 POWER MANAGEMENT SETUP screen.

WARNING : *The selection fields on this screen are provided for the professional technician who can modify the Chipset features to meet some specific requirement. If you do not have the related technical background, do not attempt to make any change except the following items.*

Power Management : (Default setting: "User Define")

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

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

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**. 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.

PM Control APM: (Default setting: "Yes")

When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock.
If the Max. Power Saving is not enabled, this will be preset to *No*.

Video Off Method: (Default setting: Blank screen)
    When you are using the Green Monitor with your PC system, there are three modes selectable in this field to save the power energy

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 After: (Default setting: "Standby")
    When enabled, this feature allows the VGA adapter to operate in a power saving mode.

N/A	Monitor will remain on during power saving modes.
Suspend	Monitor blanked when the systems enters the Suspend mode.
Standby	Monitor blanked when the system enters Standby mode.
Doze	Monitor blanked when the system enters any power saving mode.

Modem Use IRQ: (Default setting: 3)
    This mainboard has the ACPI feature designed on the board and it will "wakeup" automatically when it detects the incoming modem Ring-in signal. Before you can use the Ring-in signal to wakeup your PC system, you have to install the "External" modem to your PC system and tell the PC system which serial port connects to the modem by selecting the IRQ in this field. (officially, COM 1 uses IRQ4, and COM 2 uses IRQ3)

Doze Mode: (Default setting: Disable)
    When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed

Standby Mode: (Default setting: Disable)

When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

Suspend Mode: (Default setting: Disable)

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

HDD Power Down: (Default setting: Disable)

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

PCI/VGA Active Monitor: (Default setting: Enabled)

When CPU enters the Green mode, the system will keep scanning the status of the monitor. You may use this field to select whether you are going to have the monitor get into Green mode or not:

Enable: The screen display will not be off (or powered off) when there is the video signal sending from VGA card to monitor.

Disable: The screen display will be blank off (or powered off) no matter whether there is the video signal sending from VGA card to monitor or not.

Soft-Off by PWR-BTTN : (Default setting: "Instant-off.")

This field allows user to define the feature of the "PW" connector (it is used to connect the power button). The setting can be either "Delay 4 Sec." or "Instant-Off". Please refer to page 3-14 for details of function description.

CPUFAN Off In Suspend : (Default setting: "Enabled")

This selection allows user to controls the function of the "CN13" (CPU cooling fan connector). When "Enabled" is selected, the CPU cooling fan will stop in Suspend mode to decrease the system power consumption and noise. When "Disabled" the CPU cooling fan is keep on working when the system is in Suspend mode.

Resume by Ring or LAN : (Default setting: "Enabled".)

When "Enabled", you can resume the system from Sleep or Suspend mode by using a MODEM Ring-in or a LAN signal. In order to make this feature works normally, there are some requirement need to be noticed, please see Section 2 for details.

Resume by Alarm : (Default setting : "Disabled")
When "Enabled", the following two selection fields - "Date (of Month) Alarm" and "Time (hh:mm:ss) Alarm" will appear on the screen. You can use these two fields to set the date and time which you want to resume the system from Sleep or Suspend mode. The "Time" must be set in a 24-hour format. (for more detail information, please refer to Section 2).

Thorttle Duty Cycle: (Default setting: 62.5%)
When there is the Winbond W83783S (U4) installed on the board, the CPU speed will be slowed down ("Throttling Speed") when the W83783S detects over heating on the CPU. Slowing down the CPU speed will be the best way to cool down the CPU temperature and it will protect the CPU from damaged. Use this option to select the "Throttling Speed" to protect your CPU when over heating.

**** Reload Global Timer Events ****

When "Enabled", an event occurring on each device listed below restarts the global time for Standby mode.

> IRQ[3 -7, 9-15], NMI
> Primary IDE 0
> Primary IDE 1
> Secondary IDE 0
> Secondary IDE 1
> Floppy Disk
> Serial Port
> Parallel Port

4.8 INTEGRATED PERIPHERALS

ROM PCI / ISA BIOS (2A69KXXX)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	Onboard FDC Controller	: Enabled
IDE Primary Master PIO	: Auto	Onboard Serial Port 1	: 3F8/IRQ4
IDE Primary Slave PIO	: Auto	Onboard Serial Port 2	: 2F8/IRQ3
IDE Secondary Master PIO	: Auto	UART Mode Select	: Normal
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto	Onboard Parallel Port	: 378/IRQ7
IDE Secondary Master UDMA	: Auto	Parallel Port Mode	: SPP
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Controller	: Disabled		
Init AGP Display First	: Disabled		

POWER ON Function   : BUTTON ONLY

ESC : Quit   : Select Item
F1 : Help   PU/PD/+/- : Modify
F5 : Old Values   (Shift)F2 : Color
F7 : Load Setup Defaults

Fig. 4-7 INTEGRATED PERIPHERALS setup screen.

WARNING: *The selection fields on this screen are provided for the professional technician who can modify the Chipset features to meet some specific requirement. If you do not have the related technical background, don't attempt to make any change except the following items.*

You may use the selection options on this screen to enable or disable some of the onboard interfaces like IDE, FDC and USB. You can also change the IDE ports to PIO Mode 0, mode 1, mode 2 or mode 4.   The default setting is "auto", It is the recommended setting to users because it will decide the transfer protocol and let your PC system has the best performance.

IDE HDD Block Mode: (Default setting : "Enabled")

This selection allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive (HDD).

Enabled	IDE controller uses block mode.
Disabled	IDE controller uses standard mode.

IDE Primary/Secondary Master/Slave PIO: (Default setting : "Auto")
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.

IDE Primary/Secondary Master/Slave UDMA: (Default setting : "Auto")
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

On-Chip Primary/Secondary PCI IDE: (Default setting : "Enabled")
The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

Init AGP Display First: (Default setting : PCI slot)
When you have both the AGP and PCI VGA card installed in the system, you can use this field to decide the display priority.

    AGP: the display will be active on the AGP adapter.
    PCI slot: The display will be active on the PCI VGA adapter

USB Keyboard Support: (Default setting : "Disabled")

Select "Enabled" in this field will allow operation system to use the USB keyboard. If there is no USB keyboard connected to the PC system, leave it "Disabled".

Onboard FDD Controller: (Default setting : "Enabled")
This should be enabled if your system has a floppy disk drive (FDD) installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.
`The Choice: Enabled, Disabled`

Onboard Serial Port 1/Port 2: (Default setting : "3F8/IRQ4, 2F*/IRQ3")
This item allows you to determine access onboard serial port 1/port 2 controller with which I/O address.
The Choice: 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART 2 Mode: (Default setting : "Standard")
This item allows you to determine which Infra Red (IR) function of onboard I/O chip.
The Choice: Standard, ASKIR, HPSIR

Onboard Parallel Port: (Default setting : "378/IRQ7")
Select a logical LPT port name and matching address for the physical parallel (printer) port.
The choice: 378H/IRQ7, 278H/IRQ5, 3BCH/IRQ7, Disabled

Parallel Port Mode: (Default setting : "SPP")
Select an operating mode for the onboard parallel port. Select Compatible or Extended unless you are certain both your hardware and software support EPP or ECP mode.
The choice: ECP/EPP, ECP, EPP/SPP, SPP,.

4.9   PNP/PCI CONFIGURATION

ROM PCI / ISA BIOS (2A69KXXX)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed	: No	Assign IRQ for VGA : Disabled
Resources Controlled By	: Manual	Assign IRQ for USB : Enabled
Reset Configuration Data	: Disabled	
		Used MEM base addr : N/A
IRQ-3 assigned to	: PCI/ISA PnP	
IRQ-4 assigned to	: PCI/ISA PnP	
IRQ-5 assigned to	: PCI/ISA PnP	
IRQ-7 assigned to	: PCI/ISA PnP	
IRQ-9 assigned to	: PCI/ISA PnP	
IRQ-10 assigned to	: PCI/ISA PnP	
IRQ-11 assigned to	: PCI/ISA PnP	
IRQ-12 assigned to	: PCI/ISA PnP	
IRQ-14 assigned to	: PCI/ISA PnP	
IRQ-15 assigned to	: PCI/ISA PnP	
DMA-0 assigned to	: PCI/ISA PnP	
DMA-1 assigned to	: PCI/ISA PnP	ESC : Quit : Select Item
DMA-3 assigned to	: PCI/ISA PnP	F1 : Help PU/PD/+/- : Modify
DMA-5 assigned to	: PCI/ISA PnP	F5 : Old Values (Shift)F2 : Color
DMA-6 assigned to	: PCI/ISA PnP	F7 : Load Setup Defaults
DMA-7 assigned to	: PCI/ISA PnP	

Fig. 4-8 PNP/PCI CONFIGURATION setup screen.

WARNING :   *The selection fields on this screen are provided for the professional technician who can modify the Chipset features to meet some specific requirement. If you do not have the related technical background, do not attempt to make any change.*

PNP OS Installed : (Default setting is "No")
The setting in this field tells the system BIOS whether your operating system (OS) is a PnP OS (such as Windows® 95 and Windows® 98) or not. The PnP OS will use the system resources record stored in the ESCD segment to arrange the system environment..

Resources Controlled by : (Default setting: Manual)

Manual : The system BIOS will not refer to the ESCD data to assign IRQ & DMA. Instead, it will refer to the information recorded in this field when Assigning the IRQ & DMA resource. (the system BIOS will always refer to the ESCE data to assign the I/O and memory space resources).

Auto : The system BIOS will refer to the ESCD segment for all legacy information.

Reset Configuration Data :
Disabled : The system BIOS will do nothing.
Enabled : The system BIOS will clear (reset) the ESCD data during "POST". After clearing the ESCD data, the system BIOS will then change this item's value back to "Disabled", otherwise, the ESCD data will become useless.

IRQ# / DMA# assigned to :
There are only 15 IRQs and 8 DMAs available on the mainboard and most of them are assigned for some specific purposes. Sometimes, user may feel like to have some more IRQ and DMA in order to install the new add on cards. In this case, you may use this field to assign some of the IRQ and DMA to "PCI/ISA PnP" so that the new add on card will find the free IRQ or DMA available for it.

Legacy : The system BIOS will skip and never assign the specified IRQ/DMA
ISA   resource to PCI or ISA PnP devices and the IRQ and DMA can only be sued by their specified Legacy ISA cards.

PCI/ISA: When "PCI/ISA PnP" is selected, the related IRQ and DMA will be
PnP   released and they can be used by other PCI or ISA devices. Whenever there is the new PCI or ISA devices plugged onto the mainboard, system BIOS will detect it and assign a free IRQ or DMA for the new devices.

.Note: Most IRQ and DMA have its own purpose and they can not be assigned to "PCI/ISA PnP". For example, IRQ14 and IRQ15 is used by the onboard IDE device. If you change the setting on IRQ14 and IRQ15, you will be unable to connect the hard disk drive or CD ROM drive to the IDE interface on the mainboard. So please make sure to check the IRQ and DMA arrangement in your system before you proceed to do the setting. For instance, if you do not have the printer (IRQ7) or PS/2™ mouse (IRQ12) connected to your PC system, you may assign IRQ7 and IRQ12 to "PCI/ISA PnP" so that you can have more IRQs available for new add on cards.

Assign IRQ For VGA/USB

The system's IRQ signals are limited and sometimes you may feel like to some more IRQ signals for your add-on cards. The system BIOS allows you to disable the IRQ which is supposed to be connected to VGA and USB ports. When you have choose to disable the IRQ on VGA or USB port, the IRQ on the related IRQ will be released and becomes available for other devices.

Before you decide to proceed with the change, please make sure that you do not have USB and VGA adapter which will use the IRQ signal. Otherwise, your PC system will become abnormal and the devices connected to these ports may not be working at all.

It is very simple to tell the difference. If you are going to disable the IRQ on the USB port, check whether is any device connected to the USB port. If you can not find any device, you may feel free to disable the IRQ on the USB port and have the IRQ used by other device.

As for VGA adapter, it will be a little difficult. You may try to find whether your VGA card requires the IRQ signal or not. If you can not find the information from the user's manual of your VGA card. You may use the following information to make your choice:

1. Most VGA cards do not need to have the IRQ signal.
2. If you can not find the feature connector on your VGA card, than it is quite possible that your VGA card does not need the IRQ signal.
3. If your VGA card has the feature connector on the VGA card but it has nothing connected to it. In this case, you still may have the IRQ disabled.
4. If you have another add on card like video capture card which is connected to the feature connector on the VGA card, In this case, you can not disable the IRQ signal because the IRQ signal will be connected to the video capture card.

Used MEM base addr and *Used MEM Length* **:**
These fields are used for some special ISA legacy cards which will request memory space below 1M address. Please refer to the user's manual of your add on card to find whether it will need such memory space. If your add on card does need to have such memory space, please point out the memory address and its length of the legacy area in this field. According to what is recorded in this field, BIOS will skip the UMB area that is used by the legacy device to avoid the memory conflicting.

Note : No matter what is defined in the "Resources Controlled By" field ("Manual" or "Auto"), the system BIOS will always assign IRQ resources to PCI devices from the highest one first (ie. IRQ15, 14, 13 …) while assign IRQ resources to ISA PnP devices from the lowest one first (ie. IRQ3,4,5 ..).

4.10   LOAD SETUP DEFAULTS

ROM PCI / ISA BIOS (2A69KXXX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	HDD LOW LEVEL FORMAT
INTEGRATED PERIPHERALS	SAVE & EXIT SETUP
PNP/PCI CONFIGURATION	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	

ESC : Quit   : Select Item
F10 : Save & Exit Setup   (Shift)F2 : Change Color

Time, Date, Hard Disk Type ...

If you lost the CMOS data or you don't know how to complete the setup procedure, you may use this option to load the SETUP default values from the BIOS default table. It is easy to load the default value, simply highlight the "LOAD SETUP DEFAULTS" field and then press the "Enter" key, when you see the "LOAD SETUP DEFAULTS (Y/N)" displayed on the screen, response to it with "Y" and then press the "Enter" key. the SETUP default values will be loaded. Basically, the SETUP default settings are the best-case values that will optimize system stability.

In case that the CMOS data is corrupted, the SETUP DEFAULTS settings will be loaded automatically when you press the "Del" key and enter the main setup screen. So you may select "SAVE & EXIT SETUP" to leave setup program and the system is loaded with the default settings.

4.11   SUPERVISOR PASSWORD / USER PASSWORD

ROM PCI / ISA BIOS (2A69KXXX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	HDD LOW LEVEL FORMAT
INTEGRATED PERIPHERALS	SAVE & EXIT SETUP
PNP/PCI CONFIGURATION	EXIT WITHOUT SAVING
LOAD SETUP DEFAULT	

ESC : Quit   : Select Item
F10 : Save & Exit Setup   (Shift)F2 : Change Color

Time, Date, Hard Disk Type ...

The password entry in this field is different to the "Power On Function" mentioned in Section 2-2 and Section 4-8. Those password settings are used to power on your PC system, However, the "SUPERVISOR PASSWORD" will be used to check the authority when power-on the PC system. The Supervisor Password will have different function according to the "Security Option" setup in Section 4.5:

When "Setup" is selected in Security Option:
     If you want to change the BIOS setting, you will have to key-in the Supervisor Password so that you can start the BIOS setup program and change the system setting..

When "System" is selected in Security Option:
     When turn on the PC system, it will request you to enter the Password. Without the correct password, the PC system will stop and the operation system will not be loaded.

4.12 USER PASSWORD

ROM PCI / ISA BIOS (2A69KXXX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	HDD LOW LEVEL FORMAT
INTEGRATED PERIPHERALS	SAVE & EXIT SETUP
PNP/PCI CONFIGURATION	EXIT WITHOUT SAVING
LOAD SETUP DEFAULT	

ESC : Quit   : Select Item
F10 : Save & Exit Setup   (Shift)F2 : Change Color

Time, Date, Hard Disk Type ...

The User Password can be used to check the user's authority. Howerver, this password entry is somewhat different to the "SUPERVISOR PASSWORD" mentioned in previous page. The User Password will have different function according to the "Supervisor Password" and the "Security Option" setup in Section 4.5:

A. When there is the password stored in the "SUPERVISOR PASSWORD"
   1. When "Setup" is selected in Security Option:
      Users can use the "User Password" to log into the BIOS setup program, but they can only select "User Password", "SAVE & EXIT SETUP" and "EXIT WITHOUT SAVING". (Use the Supervisor Password to log into the PC system, you will have the complete right to change all settings in the BIOS setup program)

   2. When "System" is selected in Security Option:
      When turn on the PC system, it will request you to enter the Password. Without the correct password, the PC system will stop and the operation system will not be loaded.

B. When there is no password stored in the "SUPERVISOR PASSWORD"

1. When "Setup" is selected in Security Option:

Users can use the "User Password" to log into the BIOS setup program, and they can make all the change in the BIOS setup program.

2. When "System" is selected in Security Option:

When turn on the PC system, it will request you to enter the Password. Without the correct password, the PC system will stop and the operation system will not be loaded.

4.13 IDE HDD AUTO DETECTION

ROM PCI / ISA BIOS (2A69KXXX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	SUPERVISOR PASSWORD
BIOS FEATURES SETUP	USER PASSWORD
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	HDD LOW LEVEL FORMAT
INTEGRATED PERIPHERALS	SAVE & EXIT SETUP
PNP/PCI CONFIGURATION	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	

ESC : Quit   : Select Item
F10 : Save & Exit Setup   (Shift)F2 : Change Color
Time, Date, Hard Disk Type ...

There are so many different types of Hard Disk Drive (HDD) in the market and your PC system will not know the HDD type unless you tell it the HDD type. In order to make your PC system know the IDE HDD type, you have to tell the system what kind of HDD is connected to the mainboard by giving a set of HDD parameters. Sometimes it is not easy for users to find the proper parameters for their IDE HDD. In order to help users to find the parameters, the system BIOS provides a convent way – the auto detection of IDE HDD.

To run the auto detection program is extremely easy. Move the selection bar to "IDE HDD AUTO DETECTION" and then press "Enter", the system BIOS take over the job and try to detect the type of IDE HDD. If it succeeds, you will see a list of hard disk with its related parameters displayed on the screen. You may press on the "Y" key to confirm the HDD type (or select one of the hard disk type listed on the screen). The system BIOS will "read" the parameters into the CMOS memory and you have completed the IDE HDD setup.

4.14 SAVE & EXIT SETUP / EXIT WITHOUT SAVING

```
                ROM  PCI / ISA  BIOS  (2A69KXXX)
                      CMOS  SETUP  UTILITY
                     AWARD  SOFTWARE,  INC.
┌─────────────────────────────────┬─────────────────────────────────┐
│   STANDARD CMOS  SETUP           │  SUPERVISOR  PASSWORD           │
│                                  │                                 │
│  BIOS  FEATURES  SETUP           │  USER  PASSWORD                 │
│                                  │                                 │
│  CHIPSET  FEATURES  SETUP        │  IDE  HDD  AUTO  DETECTION      │
│                                  │                                 │
│  POWER  MANAGEMENT  SETUP        │  HDD  LOW  LEVEL  FORMAT        │
│                                  │                                 │
│  INTEGRATED  PERIPHERALS         │    SAVE  &  EXIT  SETUP         │
│                                  │                                 │
│  PNP/PCI  CONFIGURATION          │  EXIT  WITHOUT  SAVING          │
│                                  │                                 │
│  LOAD  SETUP  DEFAULTS           │                                 │
├─────────────────────────────────┴─────────────────────────────────┤
│  ESC  :  Quit                                   : Select  Item     │
│  F10  :  Save  &  Exit  Setup         (Shift)F2 : Change  Color    │
│                     Time,  Date,  Hard Disk  Type ...              │
└────────────────────────────────────────────────────────────────────┘
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A. SAVE & EXIT SETUP:
   This option will save all configuration to CMOS memory & EXIT SETUP routine. Move the selection bar to "SAVE & EXIT SETUP" and click on "Enter" key, then confirm with "Y" and "Enter" key. The system setup will be saved in the CMOS memory.

B. EXIT WITHOUT SAVING:
   This option will exit the setup routine without saving the setting which you've made in the BIOS setup program., When you do not want to save your change to the CMOS memory, you may choose to run this option and the setting what you made in the BIOS setup routine will be given away.

   Move the selection bar to "EXIT WITHOUT SAVING" and click on the "Enter" key, then you will be asked to confirm the action to exit, press the "Y" and "Enter" key, the setup program will be terminated and the system will start to reboot.