

**PT-6VBT
PT-6VAT
PENTIUM II/!!!
AT MAINBOARD**

USER'S MANUAL

(VER 2.X, 3.X)

VIA 693/693A

**PENTIUM II/!!!
AT MAINBOARD**

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(VER 2.X, 3.X)

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SOMETHING IMPORTANT !

☆ **TRADEMARKS**

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☆ **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 that should 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 4-10 for the details.

☆ **DISCHARGE 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 this mainboard when using an ATX switching power supply. Without disconnecting the AC power connector from the PC system, the mainboard may be damaged by any improper action.

☆ **WAKE ON LAN**

In order to support the Wake On LAN feature, the system requires a ATX type SPS (switching power supply), Such power supply must be able to provide at least 800 mA of driving capability on the “5V standby” voltage.

☆ **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 the AT form-factor with Slot 1 CPU connector on the board for Pentium™ II/!!! Processors. VIA693 or VIA693A chipset is chosen as the system core logic of the mainboard to give the most outstanding performance and reliability. It is designed for 233, 266, 300, 333, 350, 366, 400, 433, 450, 466, 500, 550MHz and higher speed Pentium™ II and Pentium™ !!! processors

This mainboard is designed by using either VIA693 or VIA693A system chipset. The difference is shown as following:

	Chipset	FSB Clock
PC100	VIA 693 Chipset	66.6 / 100MHz
PC133	VIA 693A Chipset	66.6 / 100 / 133MHz

This mainboard two channel "PIO" and "Ultra DMA33/66 (Ultra DMA/66 only valid on VIA 596B chipset) Bus Master" mode PCI IDE ports are built on the mainboard for IDE devices. One Floppy Disk controller interface, two high speed Serial ports (UARTs), one multi-mode Parallel port, one PS/2™ mouse port, one IR interface and two USB ports is designed on the board for wide variety of peripheral connection.

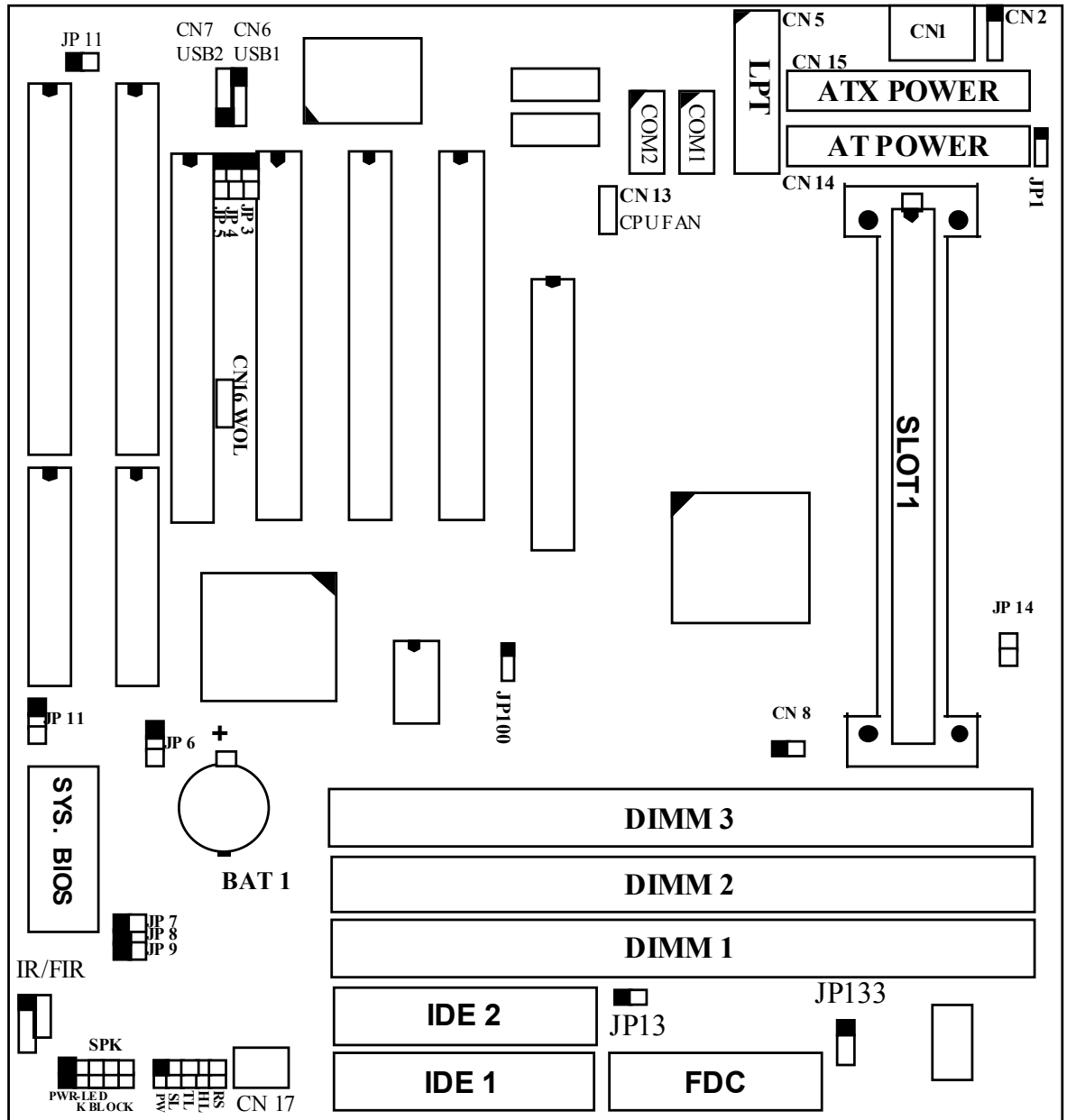
Pentium™ II, Pentium™ !!! and Celeron™ are the 32-bit processors with RISC technology, which offers several key features such as built-in 512K/256/128K L2 cache, 12-stage super-pipeline architecture, out of order execution ... etc. In order to optimize of its capabilities and performances, the 32-bit Operating System (such as Windows® and OS/2™) and 32-bit applications are recommended.

Note: When the chipset on U11 is the VIA596A, you may see the following message on the screen if you are using the UDMA/66 HDD.

"Primary IDE Channel no 80 conductor cable installed. ..."

Please don't worry for the warning on screen. Basically, this VIA596A mainboard will work with UDMA/66 HDD, only the performance will be somewhat reduced because it does not support the new transfer protocol.

1.2 MAINBOARD LAYOUT



1.3 SPECIFICATION

⊙ CPU

Intel® Pentium™ II or Pentium™ !!! 233, 266, 300, 333, 350, 366, 400, 433, 450, 466, 500MHz and higher speed processors

⊙ CPU VCC

Switching mode Voltage Regulator onboard, supports +1.30V DC through +3.5V DC CPU Core Voltage.

Note : The CPU Core Voltage will be Detected and adjusted automatically by the mainboard, so there is no jumper setting required to select the CPU voltage.

⊙ WORD SIZE

Data Path : 8-bit, 16-bit, 32-bit, 64-bit

Address Path : 32-bit

⊙ PC SYSTEM CHIPSET

PC133: VIA693A and 596B chipset

PC100: VIA693 and 596A Chipset (596B optional)

⊙ SUPER I/O CHIPSET

W83977EF/TF or CTF/ATF (optional)

⊙ FRONT SIDE BUS FREQUENCY

VIA693A : 66 MHz 100MHz and 133MHzselectable.

VIA693 : 66 MHz and 100MHz selectable.

⊙ MEMORY

Three 168-pin DIMM sockets, Maximum 768 MB with ECC.

CACHE :512KB pipelined burst SRAM in Pentium™ II, Pentium™ !!! processor.

⊙ BIOS

AWARD System BIOS. 256KB x 8 Flash ROM

(Supports Plug & Play, ACPI, DMI and Green functions).

⊙ EXPANSION SLOTS

AGP Slots : 32-bit x 1 (Supports 1x or 2x AGP graphics cards)

PCI Slots : 32-bit x 4 (All Master/Slave, PCI 2.1 Compliant)

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)

⊙ USB PORTS

Two Universal Serial Bus (USB) ports.

⊙ IDE PORTS

Two channels of Ultra DMA/33 (or UDMA/66) Bus Master IDE ports, which will support up to 4 IDE devices like IDE hard disk, ATAPI CD-ROM etc. The IDE ports can be programmed to support PIO Mode 4, DMA mode 2 and Ultra DMA/33.

Note: When the chipset on U11 is the VIA596A, you may see the following message on the screen if you are using the UDMA/66 HDD.

"Primary IDE Channel no 80 conductor cable installed. ..."

Basically, this VIA596A mainboard will work with UDMA/66 HDD, but the performance will be reduced because it does not support the new transfer protocol.

⊙ 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 or FasterIR (optional) compatible IR port.
One Consumer IR port (optional)

⊙ MOUSE AND KEYBOARD

One PS/2™ mouse connector, One AT type keyboard connector.
(PS/2™ type keyboard connector is optional)

⊙ HARDWARE DOCTOR™ (optional)

Winbond W83783S (U2) is designed on the board to monitor hardware healthy status like system voltage, system temperature, and cooling fans. When the CPU is over heated, the system BIOS will tell the system board to give a series of beeping alarm and then slow down the CPU speed so that you can take proper action to prevent damage to your system. When you hear the beeping alarm, be sure to turn the power off and open the chassis immediately, check on the cooling fans (especially the CPU cooling fan) 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.

This mainboard also provides the hardware monitoring program so that you can monitor the healthy status of your PC system. When you find there is the Winbond W83783S (U2) is installed on the board, you can run the hardware monitoring program and then it will inform you the system status all the time.

⊙ **ACPI (*This feature is valid only when ATX power supply is connected*)**

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. Power on the system by panel-switch
2. Power on the system by LAN signal.(Wake On LAN)
3. Power on the system by Keyboard (*Optional*).
4. Power on the system By PS/2 Mouse key click (*Optional*)
5. CPU cooling fan auto-off during Suspend state.
6. Resumed by Modem ring-in, RTC alarm, etc..
7. Power on the system by RTC alarm (optional)
8. Power on the system by modem Ring-in signal (optional)
9. Supports Full-On/Doze/Standby/Suspend operating modes.
10. Power off (soft-off) by OS (active with ATX SPS only) or Panel-switch.

⊙ **DIMENSION**

4-layers PCB, 220mm x 240mm (Baby-AT Form-Factor)..

⊙ **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 in the package. 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 peripheral devices.
- One Pentium™ II Processor Retention Mechanism (RM).
- One CD diskette for device drivers 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.

2.2 AMAZING WAYS TO POWER ON THE PC SYSTEM

Basically, you can connect either AT or ATX power supply to this mainboard. When the ATX power supply is connected, there are many ways to power on the system. Please read the following description for the details.

POWER BUTTON

The power button (PW switch) on the front panel is not only for power-on and power-off the PC system. When the ATX type power supply is connected to the mainboard, it can be programmed by COMS setup program and it has different features. Please refer to Section 3-2 (page 3-12, 3~13) for the detail of function description.

□ KEYBOARD PASSWORD or HOT KEY (*optional*)

When ATX type power supply is used with this mainboard, you may enter your personal password or a combination of hot key in the CMOS setup program so that you can use the keyboard password or hot key to power on your system. When the system power is off, This mainboard has the stand-by 5V voltage active and it will keep scanning the keyboard status waiting for the correct password or hot key input to turn on the system power. Without the correct password or hot key, no one else can turn on the PC system (neither by the power button).

There are two ways to power-on the PC system by keyboard, they are “Password” and “Hot KEY”:

□ PS/2™ MOUSE KEY CLICK (optional)

When you have a PS/2™ mouse and ATX power supply connected to the system, you may change the setup in the BIOS and use the mouse click to turn on the PC system power.

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: This feature is not available on the COM (serial) port mouse.

□ RTC ALARM (this feature only work with ATX power supply)

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.

Enable the “RTC Alarm Resume” selection in the BIOS setup utility, and then input the accurate date and time in following fields. (the “RTC Alarm Resume” is located in the “POWER MANAGEMENT SETUP”, please refer to Section 4-7), Having 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.

When you have finished the BIOS setting, you have to reboot the PC system and wait for the POST (Power On Self Test) is completed to enable the RTC alarm.

□ **MODEM RING-IN (For ATX power supply only)**

This mainboard can be triggered by a modem ring-in signal. When you have a *external* modem installed, you can use it to power on the PC system. When there is the incoming message from the external modem, the PC system will be triggered by the ring-in signal and wake up automatically to receive the 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** (COM1 or COM2). When the system power is off, this mainboard will continue to detect the serial port status. When it detects the ring-in signal from the serial port, the system power will be turned on and start to receive the incoming messages automatically.

To enable the Modem Ring-In feature, you have to run the BIOS setup utility and enable the “Modem or LAN resume” option (it is in the “POWER MANAGEMENT SETUP”, please refer to Section 4.7 for the settings). Having completed the BIOS setup, you have to reboot the PC system so that BIOS can verify the setting. (the “DMI pool data” will be verified by the BIOS when loading the operating system). Simply speaking, shut down the PC system and then re-start the system. The modem ring-in feature will be enabled when the operation system has been loaded.

Note: This function is not available when using the internal MODEM card.

□ **WAKE ON LAN (WOL) (For ATX power supply only)**

There is a WOL connector CN14 (see Section 3-2) 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 your remote server and monitor the PC status.

To enable this feature, you will have to use the BIOS setup utility to enable the “Modem or LAN resume” (it is located at “POWER MANAGEMENT SETUP”, please refer to Section 4-7 for the settings). Having completed the BIOS setup, you have to reboot the PC system so that BIOS can verify the setting. (the “DMI pool data” will be verified by the BIOS when loading the operating system). Simply speaking, reboot the PC system, the Wake On LAN feature will be enabled when the operation system has been loaded

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

1. When ATX power supply is connected.

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).

2. When AT power supply is connected.

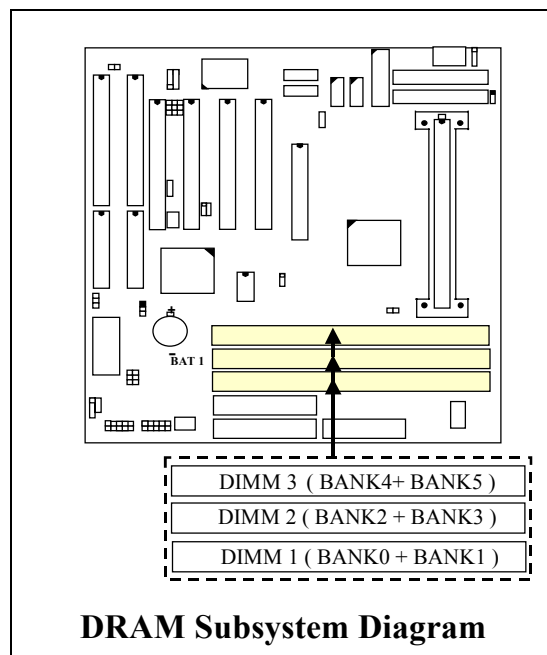
You can not use the OS to shut down the PC system, you can use only the power switch to turn the system power off.

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 component which you are going to install in your PC system. To configure this mainboard is a simple task, only a few jumpers, connectors, cables and sockets need to be selected and configured. Please refer to the following sections for the settings.

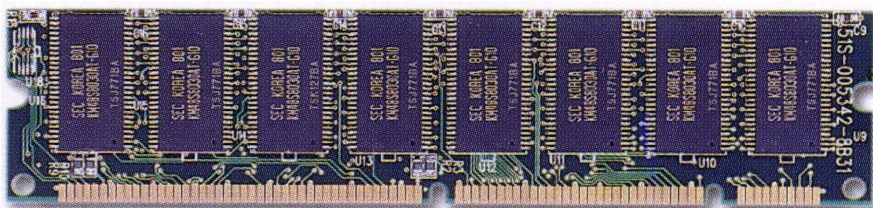
3.1 INSTALLING THE DRAM MODULES

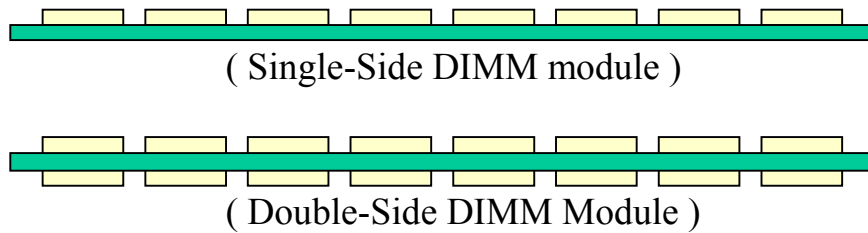
This mainboard has three DIMM sockets designed on the mainboard and you can use the single-side or double-side DIMM module on the mainboard.



Installation of DIMM modules:

1.Outlook of DIMM modules:





2. Minimum one DIMM module must be installed on the mainboard.
3. For PC133 M/B (VIA693A chipset), please use 3.3V PC-133 DIMM module.
4. For PC100 M/B (VIA693 chipset), please use 3.3V PC-100 DIMM module.
5. You can use single side or double side DIMM module on this mainboard.
6. Please install the DIMM module starting from DIMM2 first.

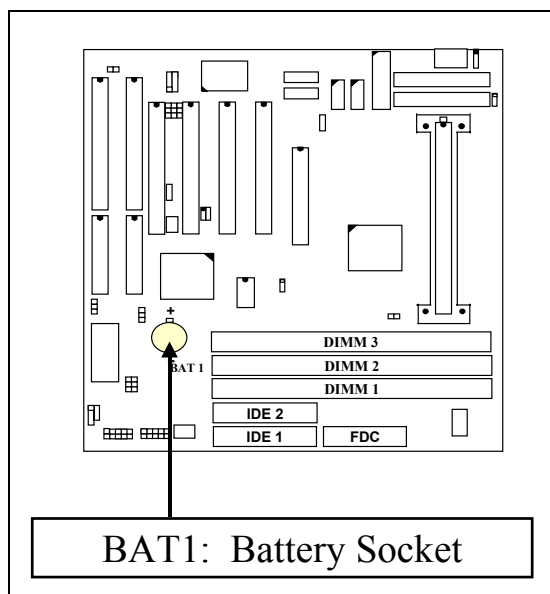


If your DIMM module does not have the parity bit, please don't enable the Parity/ECC check feature in the BIOS setup.

3.2 CONNECTORS

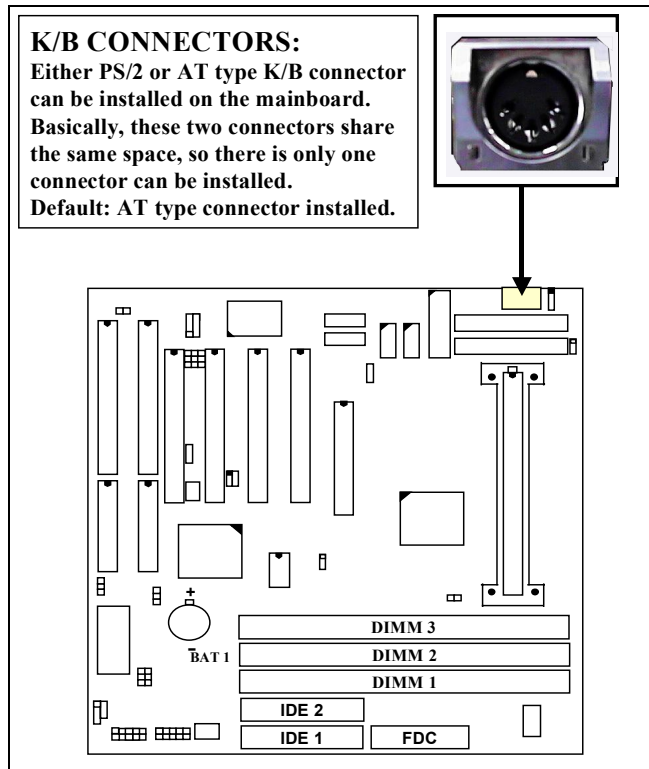
The connectors on mainboard will be used to connect the accessories or peripheral devices (such as power, mouse, printer,...etc.). Followings are the connectors with its description and pin assignment which is designed on the mainboard.

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

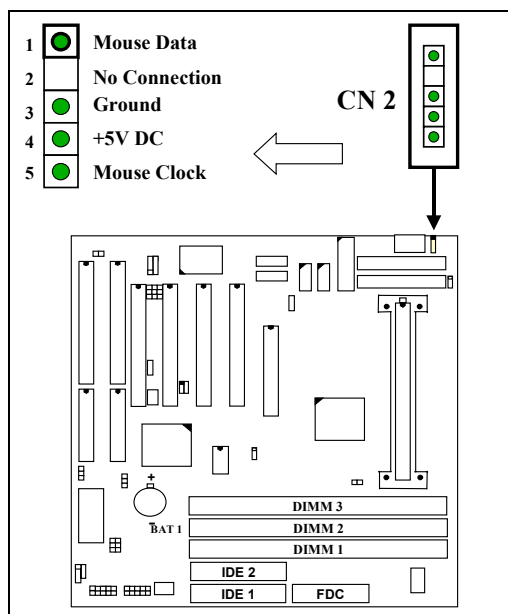


(A) CN1: Keyboard Connectors

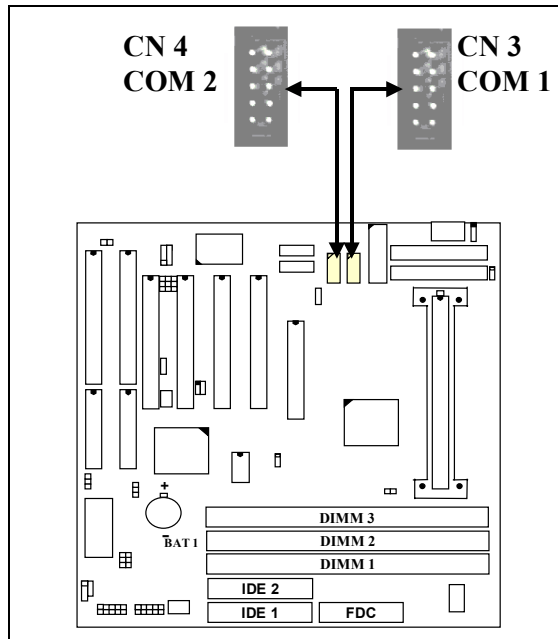
Either the PS/2 (CN20) type or the AT (CN1) type keyboard connector can be installed here, (only one connector can be installed) The factory default is the AT type connector installed on the board. When the AT type K/B installed on the board, the PS/2 type (CN20) become invisible.



(B) CN2: PS/2 Mouse Connector

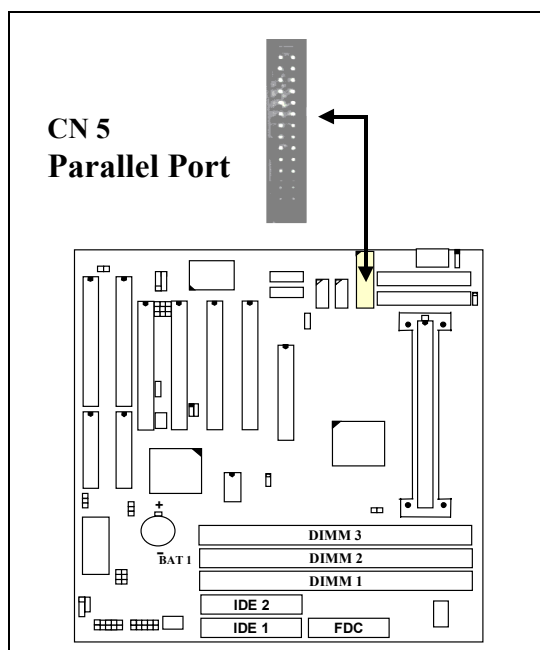


- (C) **CN3: COM 1 (Serial Port 1) Connector**
CN4: COM 2 (Serial Port 2) Connector

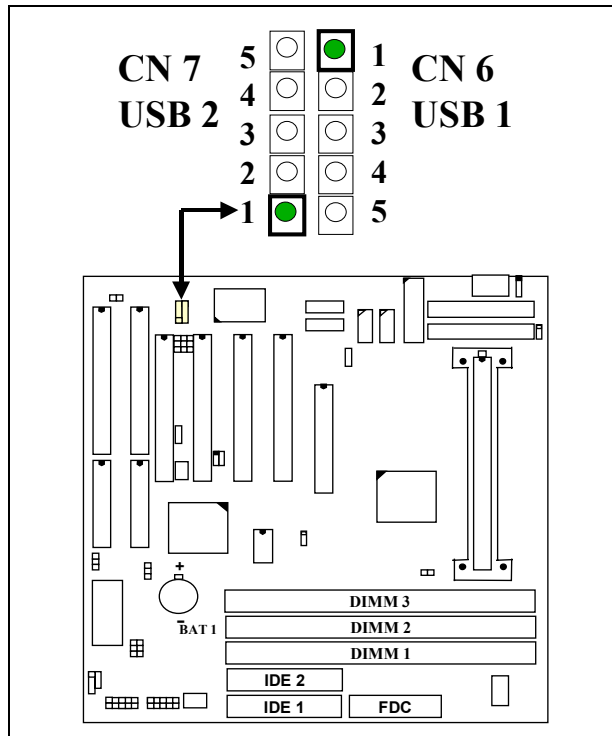


I/O address 3F8H/2F8H/3E8H/2E8H, IRQ3/IRQ4, selected by CMOS setup.

- (D) **CN5: Parallel Port Connector**



- (E) CN6: USB 1 (Universal Serial Bus) Connector
- (F) CN7: USB 2 (Universal Serial Bus) Connector

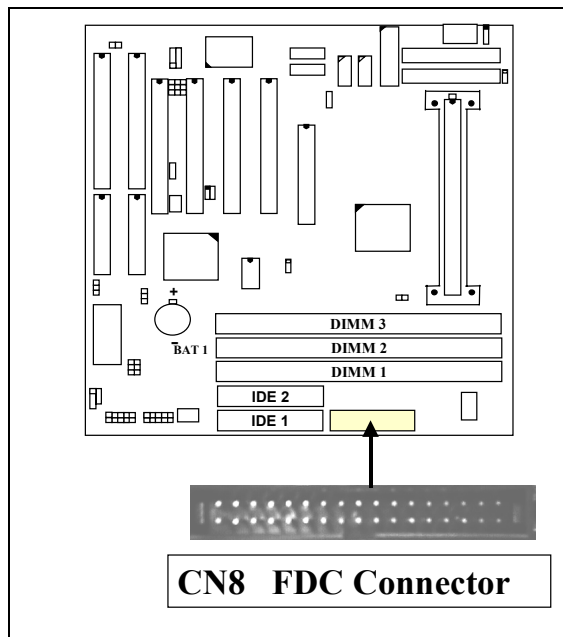


Wrong USB cable will destroy the USB device or this mainboard, please contact your dealer for correct USB cable if you are installing the USB device on the mainboard..

Pin assignment of USB connector:

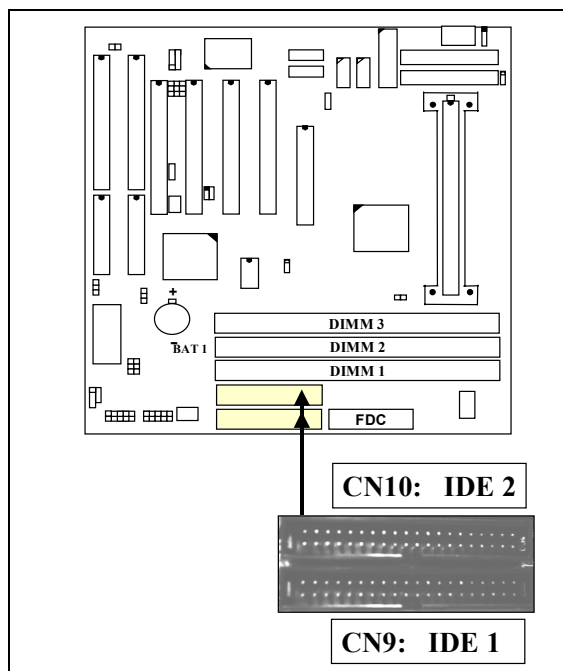
CN 7			CN 6		
Pin #	Assignment		Pin #	Assignment	
● 5	Ground (BLACK WIRE)	●	1	+5V DC (RED WIRE)	
● 4	Ground (BLACK WIRE)	●	2	DATA- (WHITE WIRE)	
● 3	DATA+ (GREEN WIRE)	●	3	DATA+ (GREEN WIRE)	
● 2	DATA- (WHITE WIRE)	●	4	Ground (BLACK WIRE)	
● 1	+5V DC (RED WIRE)	●	5	Ground (BLACK WIRE)	

(G) CN8: Floppy Disk Control Port Connector (using IRQ6, DMA 2):

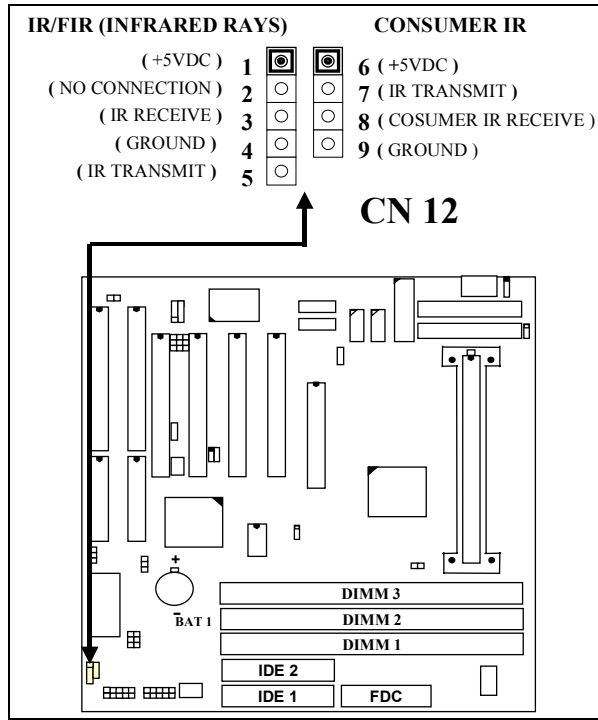


(H) CN9: IDE 1 Connectors, (Primary IDE Port: 1F0H, IRQ 14)

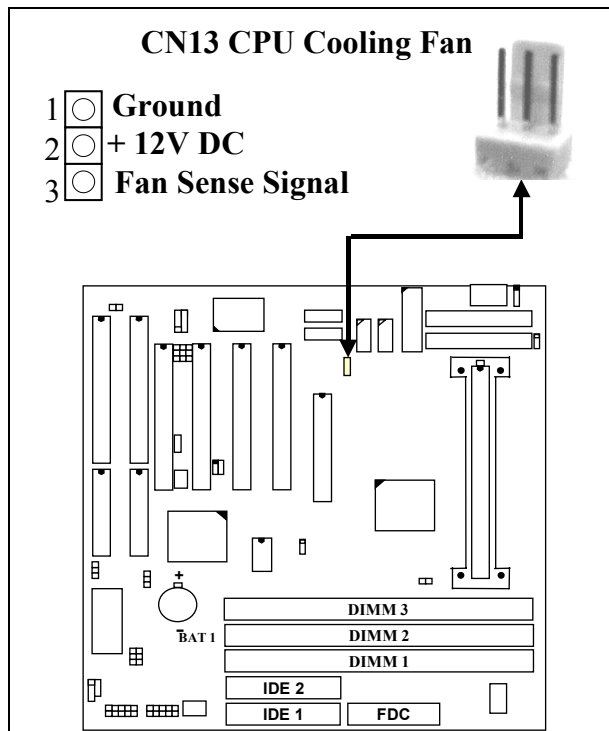
(I) CN10: IDE 2 Connectors, (Secondary IDE Port: 170H, IRQ 15)



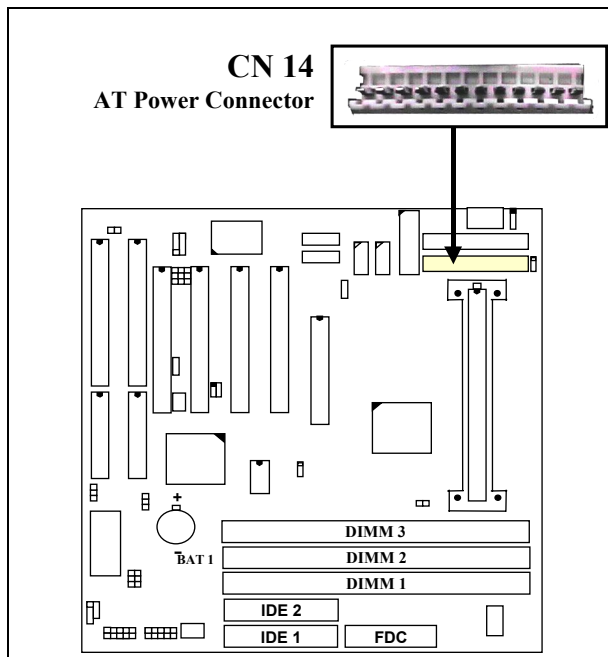
(J) CN12: IR / FIR (Infrared Rays) Connector
Consumer IR Connector (Consumer IR connector is active only when W83977CTF-AW I/O Chip is installed on position U10)



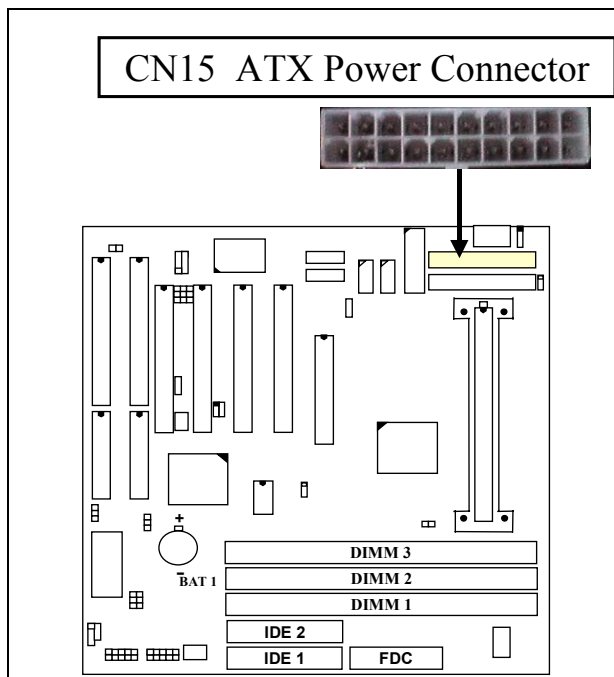
(K) CN13: CPU Cooling Fan Power Connector



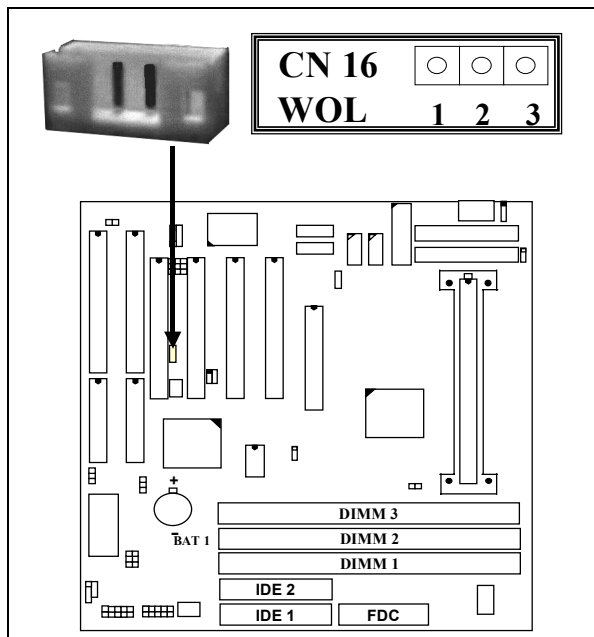
(L) CN14: AT Power Connector:



(M) CN15: ATX Power Connector:



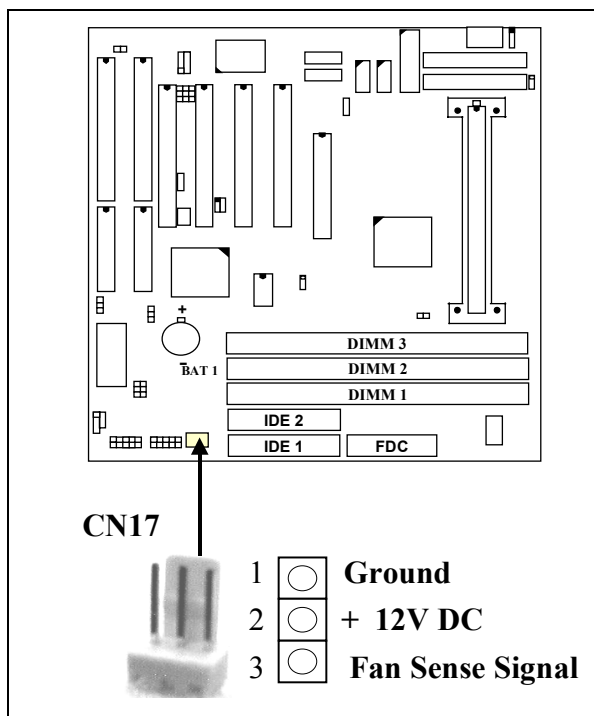
(N) CN16: WOL (Wake On LAN) Connector



Pin assignment of WOL Connector

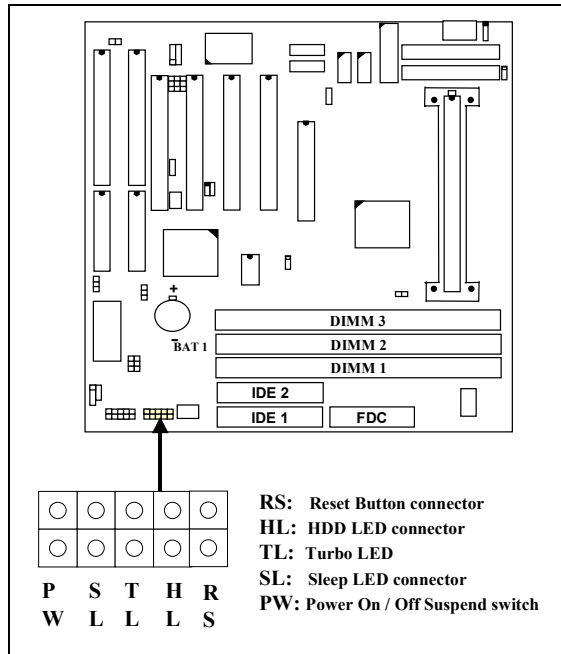
1	2	3	Pin #	Signal name	Pin #	Signal name	Pin #	Signal name
□	□	□	1	5V standby	2	Ground	3	WOL Signal

(O) CN17: Chassis Fan Power 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:

**1. RS Reset Button Connector**

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

2. HL IDE HDD LED Connector

<u>Pin #</u>	<u>Signal name</u>
1	+ 5V DC Pull-up
2	HDD Active Signal

3. TL TURBO LED Connector

<u>Pin #</u>	<u>Signal name</u>
1	+ 5V DC Pull-up
2	Ground

4. SL Sleep LED Connector (*valid only with ATX power supply*)

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.

<u>Pin #</u>	<u>Signal name</u>
1	Signal Pin
2	Ground

5. PW Power On / Off and External Suspend Switch Connector

5-a. When this mainboard has the ATX power supply connected, 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 switch function 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 4-7 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. (get into a 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 4-7 for more details.)

B. When system power is on :

Click on this switch, the system will be powered off instantly.

5-b. When this mainboard has the AT power supply connected, According to the setup in CMOS, the PW connector has two functions. It can be the Reset button or Suspend Switch of your PC system.(please refer to Section 2-2 and section 4-7 for BIOS setup)

A. When the BIOS setup is “Delay 4 sec.”:

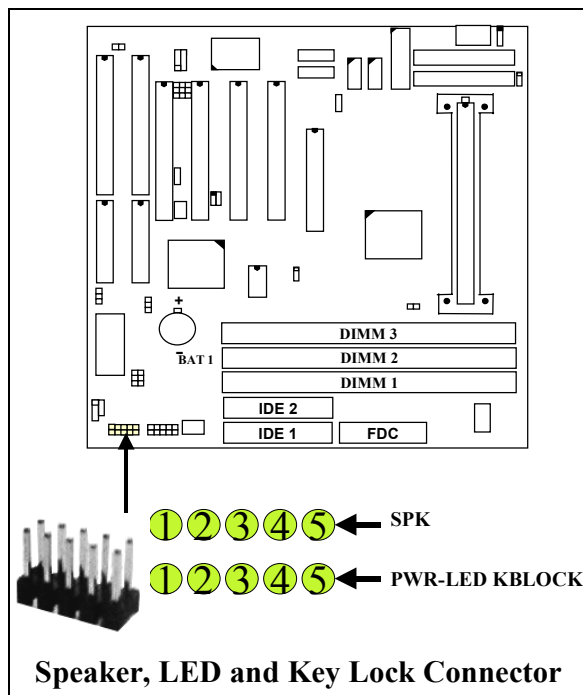
The PW switch can be used as a suspend switch. When it is first pressed, the PC system will be turned into suspend mode, when clicked again, the PC system will be back to the normal state.

B. When the BIOS setup is “Instant off”:

The PW switch can be used as a reset button in the PC system. When you click on this button, the PC system will be reset and restart again.

Note: When AT type power supply is connected to the mainboard, you may not have to connect the PW switch to the chassis of your PC system. There is the power switch on the front panel and it will be connected to the power supply so that you can use it to power on or power off the PC system.

(Q) Speaker, LED and Key Lock Connector:



SPK: Speaker connector

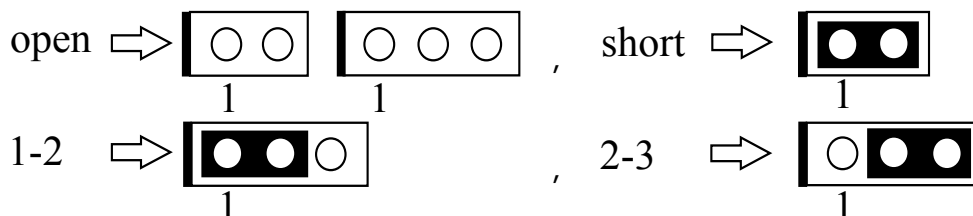
1	<u>Pin #</u>	<u>Signal name</u>
<input type="checkbox"/>	1	+ 5V DC
<input type="checkbox"/>	2	Speaker Data Signal
<input type="checkbox"/>	3	Speaker Data Signal
<input type="checkbox"/>	4	Speaker Data Signal
<input type="checkbox"/>	5	No Connection

PWR-LED & KBLOCK: Panel Power LED and Key-Lock Connector

1	<u>Pin #</u>	<u>Signal name</u>
<input type="checkbox"/>	1	Pullup (+ 5V DC for Power LED)
<input type="checkbox"/>	2	Ground
<input type="checkbox"/>	3	Ground
<input type="checkbox"/>	4	Keyboard Lock
<input type="checkbox"/>	5	Ground

3.3 JUMPERS

This section will discuss the jumper setting on this 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.

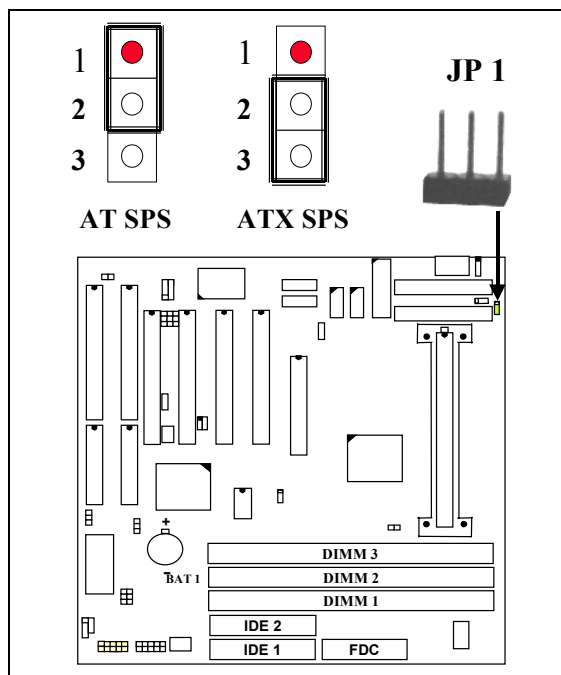


A jumper is two, three or more jumper pins which allows users to make different system configuration by moving the plastic connector plug (mini-jumper) on it.

The following jumpers which labeled with “optional” means they are optional on the mainboard and the related components are normally not populated on the board. In order to make the mainboard works properly, please make sure all jumper settings are at correct before installing this mainboard.

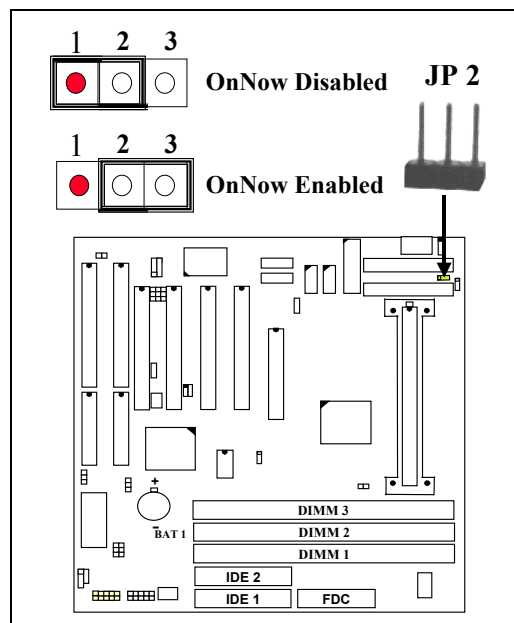
(A) JP1: Power Supply Connector Selection (optional)

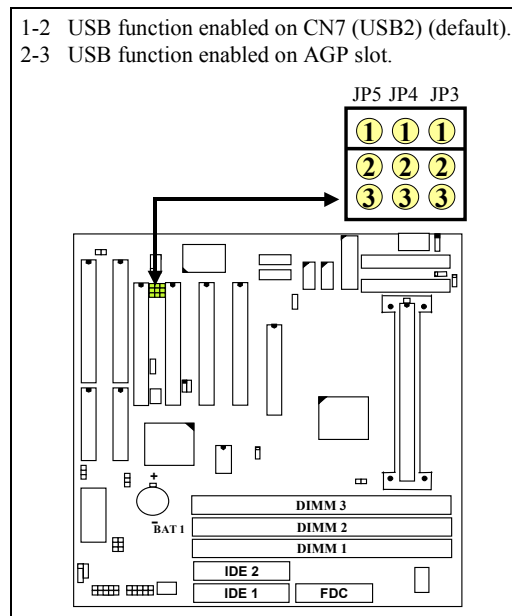
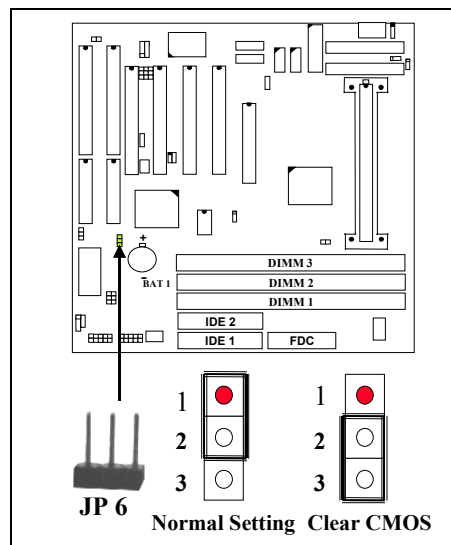
This mainboard provides two power connectors to support both the AT and ATX Switching Power Supply (SPS). JP1 will be used to select the type of SPS. If you can not find the JP1 on the mainboard, than the mainboard will detect the type of SPS automatically.



(B) JP2: OnNow Function Selection (optional)

When JP2 is installed on the board, it will support the OnNow function. The OnNow function will allow you to use Keyboard and PS/2 mouse key click to power on the PC system. Because some certain keyboard does not support OnNow function and it will cause trouble to your PC system, should it happened, please use JP2 to disable the OnNow function so that your PC system will work normally.

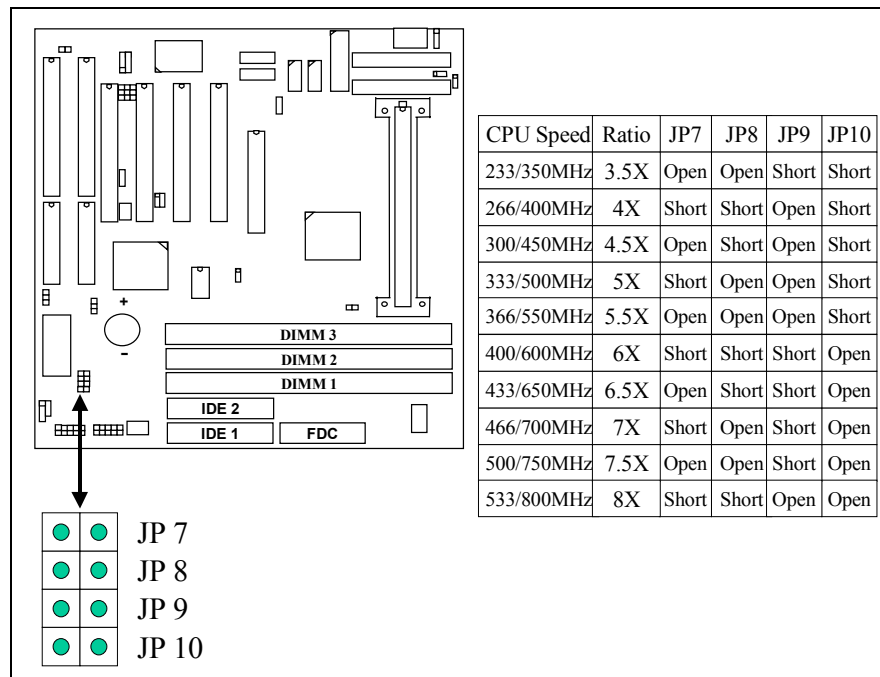
**(C) JP3, JP4, JP5: USB Port 2 Function Selection (optional)**

**(D) JP6: CMOS Data Clear Button**

Note: Improper BIOS setting may cause PC system hang-up, In case that it happened, use JP6 to clear the CMOS information 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 JP6 around 3 to 5 seconds and then return it to the original position (pin 1-2).
3. Re-connect the AC power cable.

(E) JP7, JP8, JP9, JP10: CPU Clock Ratio Selection



The jumpers above allow you to select the CPU clock ratio. However, most CPU clock ratio is fixed and "locked" in the CPU and you can not change the ratio by jumper setting. In word, the jumper setting on the mainboard is inactive when you are using the processor whose clock ratio is "locked" inside the CPU. Basically, you have to check the specification of your CPU carefully before you can make the clock ratio setting.

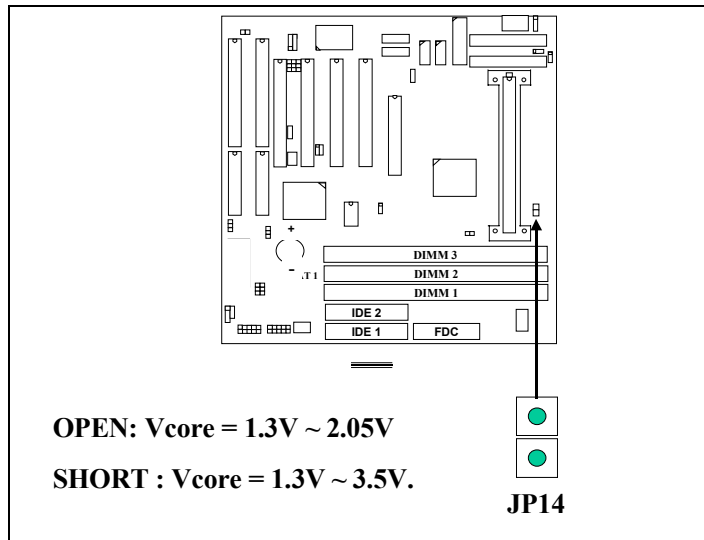
(F) JP14: CPU Voltage Range Selection (Optional)

JP14 is a special design on the mainboard which allows you to select the proper CPU voltage range (Vcore) for the Pentium II/!!! Processors so that it will provide good protection to the CPU.

The voltage regulator on the mainboard generates 1.3V ~ 3.5V DC voltage to support different processors. Basically, mainboards will use the VID signal (VID0~VID4) from the processor to generate 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.

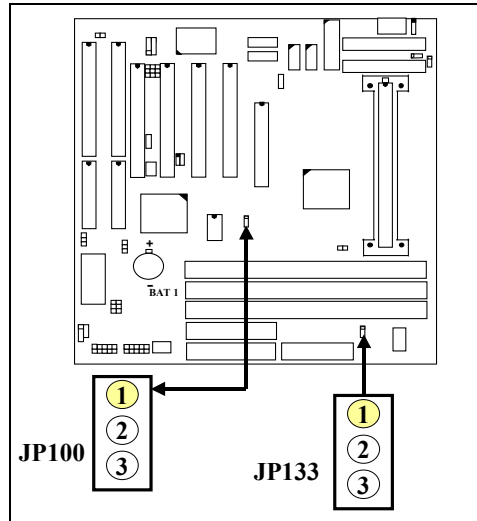
Unfortunately, wrong Vcore may destroy the CPU. So JP14 is designed on the mainboard to control the Vcore within the safe range so that it won't make any damage to the CPU because of wrong VID signal. Since most Pentium II/!!! processors require the Vcore below 2.05V except few Pentium II processors. So

the default setting of JP14 will limit the Vcore at 1.3V~2.05V. Please do not change the setting on JP14 unless your CPU needs the voltage higher than 2.05V.



(G) JP100/JP133: FSB Clock adjustment

JP100/JP133 is designed on the board for the purpose when you want to choose different FSB clock. You can use the setting on JP100/JP133 to force the FSB clock at 66/100/133MHz despite of the CPU type detected by the system BIOS.



Note: When VIA693 chipset is installed on the mainboard, you will see only JP100 on the mainboard. Since VIA693 supports 100MHz FSB clock, so you can change the setting on JP100 to select CPU FSB clock.

When VIA 693A is installed onboard, you will see both JP100 and JP133 on the board. When you want to select the FSB clock, you will have to make jumper setting on both JP100 and JP133. Please refer to the following for the settings:

FSB	JP100	JP133
Auto	Pin 1 - Pin 2	Pin 1 - Pin 2
66MHz	Pin 2 - Pin 3	Pin 2 - Pin 3
100MHz	OPEN	Pin 2 - Pin 3
133MHz	OPEN	OPEN

3.4 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.

- Step 1. Insert the CD into the CD ROM drive.
- Step 2. Change the directory to "`\Driver\mainboard\VIA\Pentium II`"
- Step 3. Run "`SETUP.EXE`" to install the device driver.

4. AWARD BIOS SETUP

4.1 GETTING STARTED

When the system is first time powered on or reset by user, the 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 beep sound or display the error message on screen.

When the system is normal, the simulate figure *Fig. 5-1* will be displayed on the screen when the system is powered on.

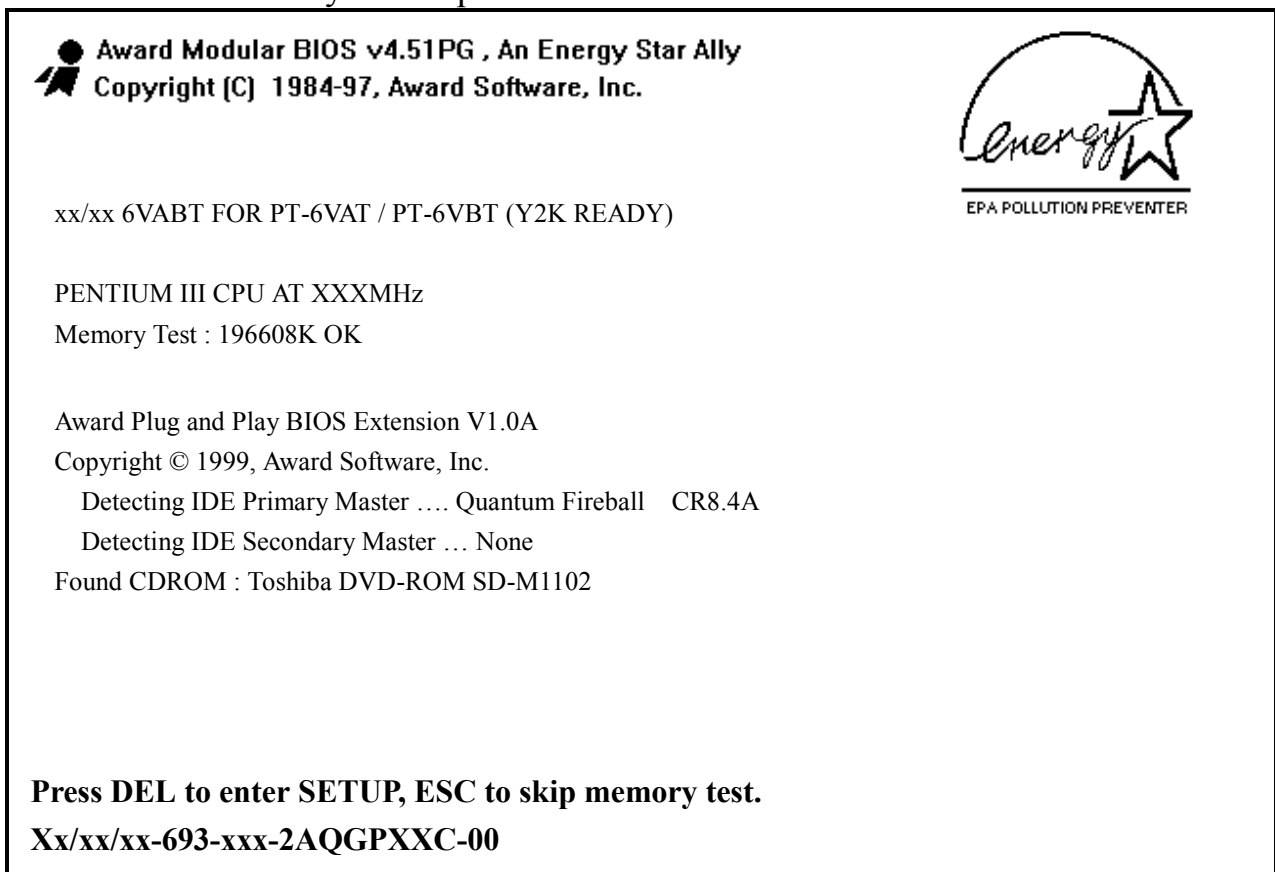


Fig. 4-1 Initial Power-On screen.

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, press on the **DEL** key. The STANDARD CMOS SETUP screen as shown in figure Fig. 5-2 will be triggered:

4.2 MAIN MENU

ROM PCI / ISA BIOS (2A6LGP8B)
 CMOS SETUP UTILITY
 AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
INTEGRATED PERIPHERALS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : 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

The following pages show all the screens which you will find in the CMOS SETUP program, each picture will contain the selection items and its default settings. At the bottom of some screen, you will find the description of all function key which can be used to change the settings. If you are not quite sure of the definition for some specific items, please consult with other technician for details.

4.4 STANDARD CMOS SETUP

ROM PCI / ISA BIOS (2A6LGP8B)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm : dd : yy) : Thr, May 7 1999																
Time (hh : mm : ss : 14 : 59 : 21																
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.				<table border="1"> <tr> <td>Base Memory :</td> <td>640 K</td> </tr> <tr> <td>Extended Memory :</td> <td>xxxxxx K</td> </tr> <tr> <td>Other Memory :</td> <td>xxxxxx K</td> </tr> <tr> <td>Total Memory :</td> <td>xxxxxx K</td> </tr> </table>					Base Memory :	640 K	Extended Memory :	xxxxxx K	Other Memory :	xxxxxx K	Total Memory :	xxxxxx K
Base Memory :	640 K															
Extended Memory :	xxxxxx K															
Other Memory :	xxxxxx K															
Total Memory :	xxxxxx K															
Drive B : None																
Floppy 3 mode support : Disabled																
Video : EGA/VGA																
Halt On : All Errors																
ESC : Quit		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : 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.
Note : "large mode" may not be fully supported by all operation systems. It is suggested to be used with the MS-DOS, such HDD is not popular nowadays.
- Auto : This mode will auto-detect your IDE driver during boot-up.

(Note: 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 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 (2A6LGP8B)

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	CC000-CFFFF 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	HDD S.M.A.R.T. capability	: Disabled
Boot Up NumLock Status	: On		
IDE HDD Block Mode	: Enabled		
Gate A20 Option	: Fast		
Memory Parity/ECC Check	: Disabled		
Typematic Rate Setting	: Disabled	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
Typematic Rate (Chars/Sec)	: 6	F1 : Help	PU/PD/+/- : Modify
Typematic Delay (Msec)	: 250	F5 : Old Values	(Shift)F2 : Color
Security Option	: Setup	F7 : Load Setup Defaults	
PS/2 mouse function control	: Enabled		
PCI/VGA Palette Snoop	: Disabled		
OS Select For DRAM > 64MB	: Non-OS2		

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 / External Cache : (default setting: Enabled)

These fields allow you to turn on or turn off the Level 1 and Level 2 cache that built inside the Pentium™ II/!!! 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)

You can not see this selection option unless you have the Pentium !!! processor installed on the mainboard. There is the serial code inside every Pentium !!! processor and it will be accessed by application to show your personal ID. If you don't feel like to give your serial code to other people, select the "Disabled" setting.

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 boot 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".

When select to load the OS from "CDROM,C,A" or "LS/ZIP,C", you must select the "HARD DISK TYPE and MODE" properly, the "Auto" selection is recommended so that you can use CDROM or LS/ZIP device to load the OS into your system. (You can find these items in the "STANDARD CMOS SETUP")

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.

Gate A20 Option: (default setting: Normal)

This field allows you to select the access mode of the data which is above 1MB.

Memory Parity / ECC Check: (default setting: Disabled)

This field allows you to enable or disable the system memory parity and ECC checking. Please make sure that your DIMM module has the parity bit before you will can select "Enabled" in this field.

Security Option : (default setting: Setup)

This selection field allows you to select the secure function of the PC system. 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. (please refer to section 4.11)

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

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”.

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.

HDD S. M. A. R. T. capability : (default setting: Disabled)

S.M.A.R.T. (Self Monitoring Analysis Reporting Technology) is a new technology of hard disk drive. Such technology will monitor the access to the hard drive and let you have a better reliability. When S.M.A.R.T is enabled, the system BIOS can receive analytical information from the hard drive and send you the warning message about the possible failure in the hard drive

4.6 CHIPSET FEATURES SETUP

ROM PCI / ISA BIOS (2A6LGP8B)
 CHIPSET FEATURES SETUP
 AWARD SOFTWARE, INC.

Bank 0/1 DRAM Timing	: SDRAM 10ns	Auto Detect DIMM / PCI Clk	: Enabled
Bank 2/3 DRAM Timing	: SDRAM 10ns	Spread Spectrum Modulated	: Disabled
Bank 4/5 DRAM Timing	: SDRAM 10ns	CPU Host / PCI Clock	: Default
SDRAM Cycle Length	: 3		
DRAM Clock	: AGP CLK		
Memory Hole	: Disabled		
Read Around write	: Disabled		
Concurrent PCI/Host	: Disabled		
System BIOS Cacheable	: Disabled		
Video RAM Cacheable	: Disabled		
AGP Aperture Size	: 64M		
AGP - 2X Mode	: Enabled		
OnChip USB	: Enabled	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
USB Keyboard Support	: Disabled	F1 : Help	PU/PD/+/- : Modify
		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.*

Bank 0/1, 2/3, 4/5 DRAM Timing : (Default Setting: SDRAM 10ns)

The DRAM timing of Bank 0/1, 2/3, 4/5 in this field is used to adjust the access time of the memory subsystem. Depending on different memory chips installed on the board, you need to select different timing so that your PC system will be working properly. Different timing will lead to different system performance. However, improper setting in this field may cause system unstable. Please check your DRAM module carefully before you may proceed with the setting.

SDRAM Cycle Length : (default setting: 3)

The Cycle Length in this field is used to define the CAS latency. The CAS latency is one of the most important parameter in the memory subsystem because it will decide the system performance. Basically, the default setting "3" is the suggest parameter for this mainboard. You may also select "2" to make the system faster, Before you can make this selection, please make sure that your SDRAM is fast enough otherwise your PC system will be unstable.

DRAM Clock : (default setting: AGP CLK)

When VIA693 is installed on the board, you will see "CPU CLK" and "AGP CLK" selectable in this field. If your SDRAM modules support the specification of PC-100, please select CPU CLK. If your SDRAM does not compatible with PC-100, select AGP CLK.

When VIA693A is installed on the mainboard, you will be able to select between CPU CLK and HCLK-33 (default setting: CPU CLK). Please refer to the following for the difference:

- A. When FSB clock is 133MHz:
 - 1. CPU CLK: please use PC-133 DIMM module.
 - 2. HCLK-33: please use PC-100 DIMM module.
- B. When FSB clock is 100MHz:
 - 1. CPU CLK: please use PC-100 DIMM module.
 - 2. HCLK-33: please use PC-166 DIMM module.

Memory Hole : (default setting: Disabled)

Some specific add-on cards may require one MB address space between 15MB and 16MB area. Please refer to the user's manual of your add-on card carefully to see whether you will have to enable this field or not when you are installing a add-on card to the system..

Read Around write : (default setting : Disabled)

DRAM optimization feature: If a memory read is addressed to a location whose latest write is being held in a buffer before being written to memory, the read is satisfied through the buffer contents, and the read is not sent to the DRAM

The choice: Enabled, Disabled.

Concurrent PCI / Host : (default Setting : Disabled)

When disable, CPU bus will be occupied during the entire PCI operation period.

The choice: Enabled, Disabled.

System BIOS Cacheable : (default setting: Disabled)

Select Enabled allows caching of the system BIOS ROM at F000h-FFFFh, 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 RAM Cacheable : (default setting: Disabled)

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

Enabled	Video RAM access cached
Disabled	Video RAM access not cached

AGP Aperture Size : (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.

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, this feature is supported already and you can select the memory for the AGP Aperture size in this field.

AGP-2X: (Default setting: Enabled)

Enable this field will make the board support 2X AGP card. If you select “Disable”, then onle 1X AGP card will be supported by this mainboard.

OnChip USB : (default setting: Enabled)

This should be enabled if your system has a USB 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.

USB Keyboard Support : (default setting: Disabled)

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

The choice: Enabled, Disabled.

Auto Detect DIMM/PCI Clk: (Default setting: Enabled)

When you select “Enabled”, 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: Disabled)

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

CPU Host/ PCI Clock: (Default setting: “Default”)

This selection field is used to decide the CPU FSB and PCI clock. Basically, this mainboard is designed by using the VIA 82C693(A) chipset and it supports both the 100MHz and 66MHz FSB frequency (VIA693A supports 133MHz). 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 JP7, JP8, JP9 and JP10 to select the CPU clock ratio to decide the CPU speed. please refer to Section 3.3-G for details of the jumper settings.

IMPORTANT: As you may have noticed, the higher FSB frequency will surely give you the higher system performance. However, the PCI clock also increased at the same time. If the peripheral is not fast enough, your PC system will become very unstable when you change the Host clock. it is not recommended because it may cause the system unstable,

4.7 POWER MANAGEMENT SETUP

ROM PCI / ISA BIOS (2A6LGP8B)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI function	: Disabled	Primary INTR	: ON
Power Management	: User Define	IRQ3 (COM 2)	: Primary
PM Control by APM	: Yes	IRQ4 (COM 1)	: Primary
Video Off After	: Standby	IRQ5 (LPT 2)	: Primary
Video Off Method	: Blank Screen	IRQ6 (Floppy Disk)	: Primary
MODEM Use IRQ	: 3	IRQ7 (LPT 1)	: Disabled
Soft-Off by PWR-BTTN	: Instant-Off.	IRQ9 (IRQ2 Redir)	: Secondary
HDD Power Down	: Disable	IRQ10 (Reserved)	: Secondary
Doze Mode	: Disable	IRQ11 (Reserved)	: Secondary
Suspend Mode	: Disable	IRQ12 (PS/2 Mouse)	: Primary
** PM Events **		IRQ13 (Coprocessor)	: Primary
VGA	: OFF	IRQ14 (Hard Disk)	: Primary
LPT & COM	: LPT / COM	IRQ15 (Reserved)	: Disabled
HDD & FDD	: ON	ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
DMA / master	: OFF	F1 : Help	PU/PD/+/- : Modify
Modem or LAN resume	: Disabled	F5 : Old Values	(Shift)F2 : Color
RTC Alarm Resume	: Disabled	F7 : Load Setup Defaults	

Fig. 4-6 POWER MANAGEMENT SETUP screen.

ACPI function : (default setting: disabled)

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

The choice: Enabled, Disabled.

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'S . Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

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 After: (Default setting: "Standby")

When enabled, it 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.

Video Off Method: (Default setting: Blank screen)

This determines the manner in which the monitor is blanked.

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

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, COM1 uses IRQ4, and COM2 uses IRQ3) The choices: NA, 3, 4, 5, 7, 9, 10, 11

Soft-Off by PWR-BTTN : (Default setting: “Instant-Off.”)

This selection field allows you to select the function of the PW switch. When ATX power supply is connected to the mainboard, you can select "Instant-Off" or " Delay 4 Sec.". If you select "Instant-Off", the PC system will be powered off immediately when you click on the PW switch. If you select or " Delay 4 Sec.", you will have to press and hold the PW switch for more than 4 second and then the system will be powered off.

The Choice: Instant-Off, Delay 4 Sec..

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.

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.

Suspend Mode: (Default setting: “Disable “)

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

**** PM Events ****

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

VGA : (Default setting: On)

When set to *On* (default), any event occurring at a VGA port will awaken a system which has been powered down.

LPT & COM : (Default setting: LPT/COM)

When set to *On* (default), any event occurring at a COM(serial)/LPT (printer) port will awaken a system which has been powered down.

HDD & FDD : (Default setting: ON)

When set to *On* (default), any event occurring at a hard or floppy drive port will awaken a system which has been powered down.

DMA/master : (Default setting: ON)

When set to *On* (default), any event occurring at a hard or floppy drive port will awaken a system which has been powered down.

Modem or LAN Resume : (Default setting: Disabled)

When set to *Enabled* , any event occurring to the Modem Ring will awaken a system which has been powered down.

The Choice: Enabled, Disabled.

RTC Alarm Resume : (Default setting: Disabled)

When *Enabled*, you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode

Primary INTR : (Default setting: ON)

When set to *On* (default), any event occurring at will awaken a system which is in Suspend mode.

The following is a list of IRQ's, Interrupt **ReQ**uests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service. When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

IRQ3(COM 2)	IRQ4(COM 1)	IRQ5(LPT 2)
IRQ6(Floppy Disk)	IRQ7(LPT 1)	IRQ8(RTC Alarm)
IRQ9(IRQ2 Redir)	IRQ10(Reserved)	IRQ11(Reserved)
IRQ12(PS/2 Mouse)	IRQ13(Coprocessor)	IRQ14(Hard Disk)
IRQ15(Reserved)		

4.8 PNP/PCI CONFIGURATION

ROM PCI / ISA BIOS (2A6LGP8B)
 PNP/PCI CONFIGURATION
 AWARD SOFTWARE, INC.

PNP OS Installed	:	No	CPU to PCI Write Buffer	:	Enabled
Resources Controlled By	:	Manual	PCI Dynamic Bursting	:	Enabled
Reset Configuration Data	:	Disabled	PCI Master 0 WS Write	:	Enabled
IRQ-3 assigned to	:	PCI/ISA PnP	PCI Delay Transaction	:	Enabled
IRQ-4 assigned to	:	PCI/ISA PnP	PCI #2 Access #1 Retry	:	Disabled
IRQ-5 assigned to	:	PCI/ISA PnP	AGP Master 1 WS Write	:	Enabled
IRQ-7 assigned to	:	PCI/ISA PnP	AGP Master 1 WS Read	:	Disabled
IRQ-9 assigned to	:	PCI/ISA PnP	Assign IRQ For USB	:	Enabled
IRQ-10 assigned to	:	PCI/ISA PnP	Assign IRQ For VGA	:	Enabled
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	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	: 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”)

Select Yes if the system operating environment is Plug-and-Play aware (e.g., Windows 95).

The Choice: Yes and No.

Resources Controlled by : (default setting: “Manual”)

The Award Plug and Play BIOS can automatically configure all the boot and Plug and Play-compatible devices. If you select Auto, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assign them.

Reset Configuration Data : (default setting: “Disabled”)

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

The choice: *Enabled* and *Disabled*.

IRQ# assigned to : (default setting: “PCI/ISA PnP”)

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

DMA# assigned to : (default setting: “PCI/ISA PnP”)

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific DMA channel

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

CPU to PCI Write Buffer : (Default setting: Enabled)

When enabled, up to four Dwords of data can be written to the PCI bus without interrupting the CPU. When disabled, a write buffer is not used and the CPU read cycle will not be completed until the PCI bus signals that it is ready to receive the data.

Choices are Enabled, Disabled

PCI Dynamic Bursting : (Default setting: Enabled)

When Enabled, every write transaction goes to the write buffer. Burstable transactions then burst on the PCI bus and nonburstable transactions don't.

Choices are Enabled, Disabled.

PCI Master 0 WS Write : (Default setting: Enabled)

When *Enabled*, writes to the PCI bus are executed with zero wait states.
Choices are Enabled, Disabled.

PCI Delay Transaction : (Default setting: Enabled)

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.

PCI#2 Access #1 Retry : (Default setting: Disabled)

This item allows you enable/disable the PCI #2 Access #1 Retry.

The choice: Enabled, Disabled

AGP Master 1 WS Write : (Default setting: Enabled)

This implements a single delay when writing to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

The choice: Enabled, Disabled.

AGP Master 1 WS Read : (Default setting: Enabled)

This implements a single delay when reading to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability.

The choice: Enabled, Disabled

Assign IRQ For VGA/USB : (default setting: "Enabled")

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 of this mainboard 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 port will be released and becomes available for other devices.

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

4.9 INTEGRATED PERIPHERALS

ROM PCI / ISA BIOS (2A6LGP8B)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

On-Chip IDE Channel0	: Enabled	UART Mode Select	: Normal
On-Chip IDE Channel1	: Enabled		
IDE Prefetch Mode	: Enabled		
Primary Master PIO	: Auto	Onboard Parallel Port	: 378/IRQ7
Primary Slave PIO	: Auto	Parallel Port Mode	: SPP
Secondary Master UDMA	: Auto		
Secondary Slave UDMA	: Auto		
Primary Master UDMA	: Auto		
Primary Slave UDMA	: Auto		
Secondary Master PIO	: Auto		
Secondary Slave PIO	: Auto		
Init Display First	: PCI Slot		
		ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
KBC input clock	: 8Mhz	F1 : Help	PU/PD/+/- : Modify
Onboard FDC Controller	: Enabled	F5 : Old Values	(Shift)F2 : Color
Onboard Serial Port 1	: 3F8 / IRQ4	F7 : Load Setup Defaults	
Onboard Serial Port 2	: 2F8 / IRQ3		

Fig. 5-7 INTEGRATED PERIPHERALS setup screen.

On-Chip IDE Chanel 0/1: (Default setting: “Enabled”)

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

IDE Prefetch Mode: (Default setting: “Enabled”)

This allows you to select the IDE interface prefetch mode. Basically, Enable is suggested because it will increase the HDD data performance.

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.

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.

Init 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 Slot: the display will be active on the AGP adapter.

PCI Slot: The display will be active on the PCI VGA adapter

KBC input clock: (Default setting : “PCI Slot”)

This field allows to you select the clock frequency of the onchip keyboard controller.

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.

Onboard Serial Port 1/Port 2: (Default setting : “3F8, IRQ4/ 2F8, 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 Mode Select: (Default setting : “Normal”)

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

The Choice: Normal, ASKIR, HPSIR

Onboard Parallel Port: (Default setting : “378/IRQ7”)

Select a logical LPT port name and matching address for the physical parallel 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: SPP, ECP+EPP1.7, EPP1.7+SPP, EPP1.9+SPP, ECP, ECP+EPP1.9, and

Normal

4.10 LOAD SETUP DEFAULTS

ROM PCI / ISA BIOS (2A6LGP8B)
 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	SAVE & EXIT SETUP
PNP/PCI CONFIGURATION	EXIT WITHOUT SAVING
INTEGRATED PERIPHERALS	
LOAD SETUP DEFAULTS	
ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : 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 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 performance and increase 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.

User Password:

The User Password can be used to check the user's authority. However, 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.

4.12 IDE HDD AUTO DETECTION

ROM PCI/ISA BIOS (2A6LGP8B)
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	SAVE & EXIT SETUP
PNP/PCI CONFIGURATION	EXIT WITHOUT SAVING
INTEGRATED PERIPHERALS	
LOAD SETUP DEFAULTS	
ESC : Quit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Time, Date, Hard Disk Type ...	

In order to make the IDE hard disk known to the system, you need to tell the system what kind of hard disk is connected to the mainboard by giving a set of hard disk parameters. Sometimes it is not easy for users to find the proper parameters for their IDE hard disk drive. In order to help users to find the parameters, the system BIOS provides a convent way – the auto detection of IDE hard disk drive.

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 hard disk. If it succeeds, you will see a list of hard disk with its related parameters. You may press on the “Y” key (or select one of the hard disk type listed on the screen). The system BIOS will transfer the parameters to the corresponding fields in the STANDARD CMOS SETUP menu and you have completed the IDE hard disk setup.

4.13 SAVE & EXIT SETUP / EXIT WITHOUT SAVING

ROM PCI / ISA BIOS (2A6LGP8B)
 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	SAVE & EXIT SETUP
PNP/PCI CONFIGURATION	EXIT WITHOUT SAVING
INTEGRATED PERIPHERALS	
LOAD SETUP DEFAULTS	
ESC : Quit □□□□ : Select Item F10 : Save & Exit Setup (Shift)F2 : Change Color Time, Date, Hard Disk Type ...	

SAVE & EXIT SETUP:

This option will save all settings to CMOS memory and then exit the SETUP routine. Move the selection bar to “SAVE & EXIT SETUP” and then press the “Enter” key. Confirm with the “Y” and “Enter” keys to the screen prompt and the setup information will be stored in the CMOS memory. The setup program will be terminated and the system will start to reboot.

EXIT WITHOUT SAVING:

This item exit the setup routine without saving any changed values to CMOS RAM. 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.