6BA

USER'S MANUAL

1. **System power on by PS/2 Mouse: First, enable this function in CMOS Setup, then you can power on the system by double clicking the right or left button of your PS/2 Mouse.**
2. **System power on by Keyboard: If your ATX power supply supports larger than 300 mA 5V Stand-By current, you can power on your system by entering password from the Keyboard after setting the "Keyboard power on" jumper (JP1) and password in CMOS Setup.**
3. **Support Modem Ring-On. (Include internal Modem and external modem on COM A and COM B)**
4. **Wake-up on LAN supports(on J11): Your ATX power supply must support larger than 720 mA 5V Stand-By current.**
5. **Support 3 steps ACPI LED.**
6. **Support LDCM â**

For Intel Pentium â II / III / Celeron™ Processor MAINBOARD
REV. 3.0 First Edition

R-30-01-090526

The author assumes no responsibility for any errors or omissions which may appear in this document nor does it make a commitment to update the information contained herein.

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May 26, 1999 Taipei, Taiwan

I. Quick Installation Guide :

CPU SPEED SETUP

The system bus speed can be selectable between 66.6MHz and 100MHz. The user can select the system bus speed (JP8) and change the DIP SWITCH selection to set up the CPU speed for 233 - 633MHz processor.

The CPU speed must match with the frequency RATIO. It will cause system hanging up if the frequency RATIO is higher than CPU's.

FREQ. RATIO	DIP SWITCH			
	1	2	3	4
X 3	ON	OFF	ON	ON
X 3.5	OFF	OFF	ON	ON
X 4	ON	ON	OFF	ON
X 4.5	OFF	ON	OFF	ON
X 5	ON	OFF	OFF	ON
X 5.5	OFF	OFF	OFF	ON
X 6	ON	ON	ON	OFF
X 6.5	OFF	ON	ON	OFF
X 7	ON	OFF	ON	OFF
X 7.5	OFF	OFF	ON	OFF
X 8	ON	ON	OFF	OFF
X 8.5	OFF	ON	OFF	OFF
X 9	ON	OFF	OFF	OFF
X 9.5	OFF	OFF	OFF	OFF

JP8 (Select the system speed between 66.6MHz and 100MHz)

1-2 Close	3 2 1	**Set system speed to 66MHz** - system always run at 66MHz FSB (Front Side Bus).
2-3 Close	3 2 1	**Set system speed to Auto** - system speed detect automatically (66/ 100MHz FSB).
1-2-3 Open	3 2 1	**Set system speed to 100MHz** - system always run at 100MHz FSB (Front Side Bus).

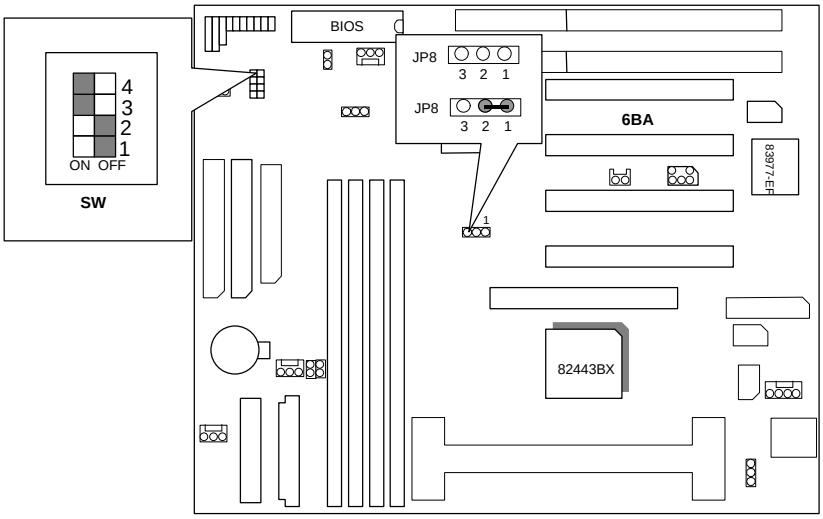
There are two ways to set system speed

A. 66MHz forced (JP8 1-2 short) or Auto detect (2-3 short)

B. 100MHz forced (JP8 1-2-3 open) or Auto detect (2-3 short)

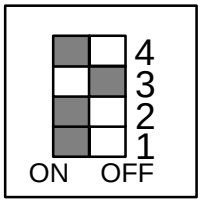
☞ **The black part in the picture is the white extruding piece of the DIP switch.**

1. Pentium® II / Celeron™ 233 / 66 MHz FSB

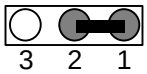


2. Pentium® II / Celeron™ 266 / 66 MHz FSB

SW

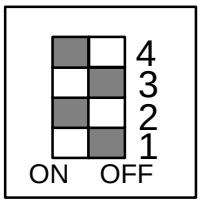


JP8

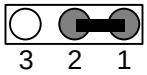


3. Pentium® II / Celeron™ 300MHz / Celeron™ 300A MHz/66MHz FSB

SW

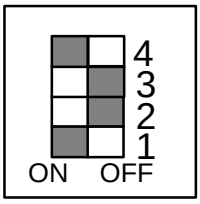


JP8

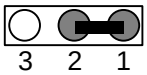


4. Pentium® II / Celeron™ 333 / 66 MHz FSB

SW

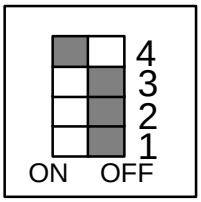


JP8

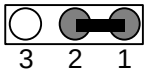


5. Pentium® II / Celeron™ 366 / 66 MHz FSB

SW

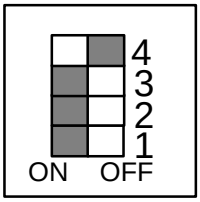


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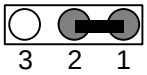


6. Pentium® II / Celeron™ 400 MHz / 66MHz FSB

SW

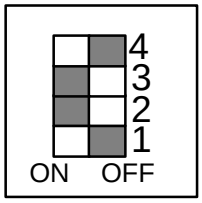


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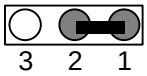


7. Pentium® II / Celeron™ 433 MHz / 66MHz FSB

SW

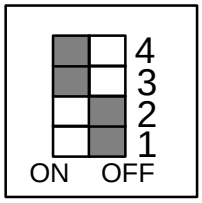


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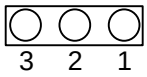


8. Pentium® II 350 / 100 MHz FSB

SW

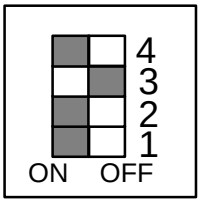


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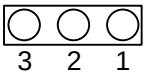


9. Pentium® II 400 / 100 MHz FSB

SW

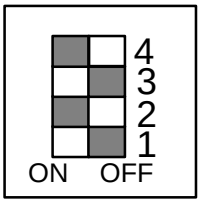


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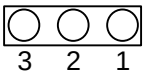


10. Pentium® III 450 / 100 MHz FSB

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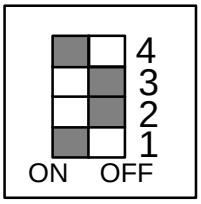


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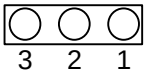


11. Pentium® III 500 / 100 MHz FSB

SW

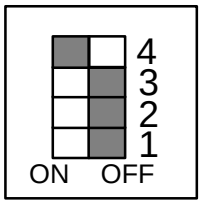


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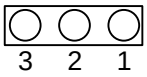


12. Pentium® III 550MHz / 100MHz FSB

SW

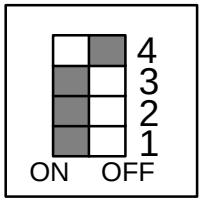


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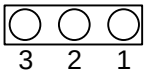


13. Pentium® III 600MHz / 100MHz FSB

SW

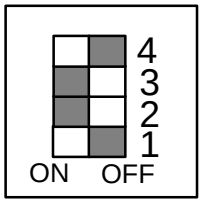


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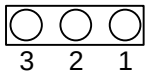


14. Pentium® III 650MHz / 100MHz FSB

SW

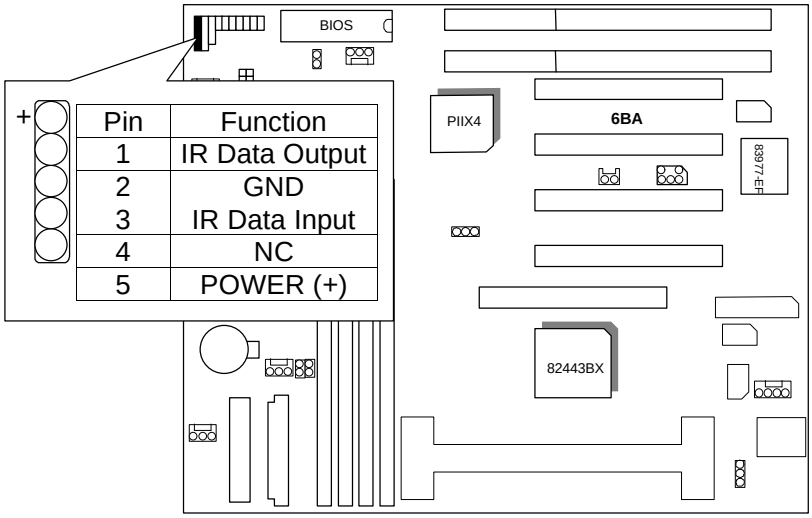


JP8



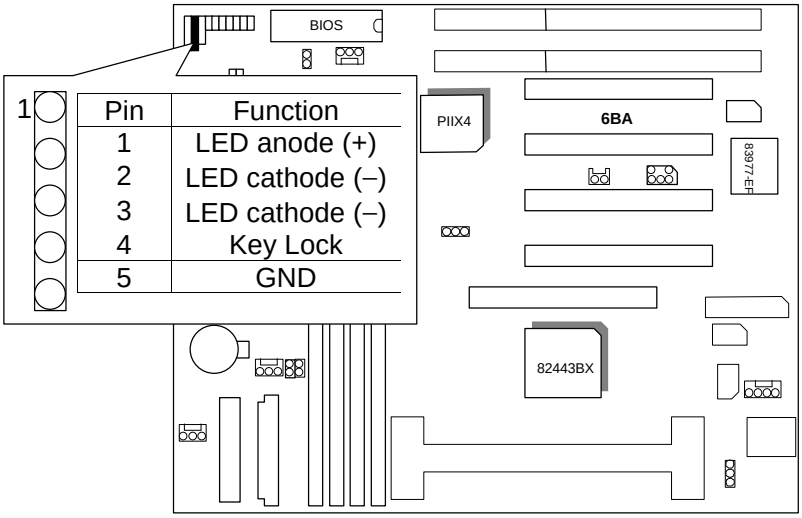
II. Jumper setting :

IR : Infrared Connector (Optional)



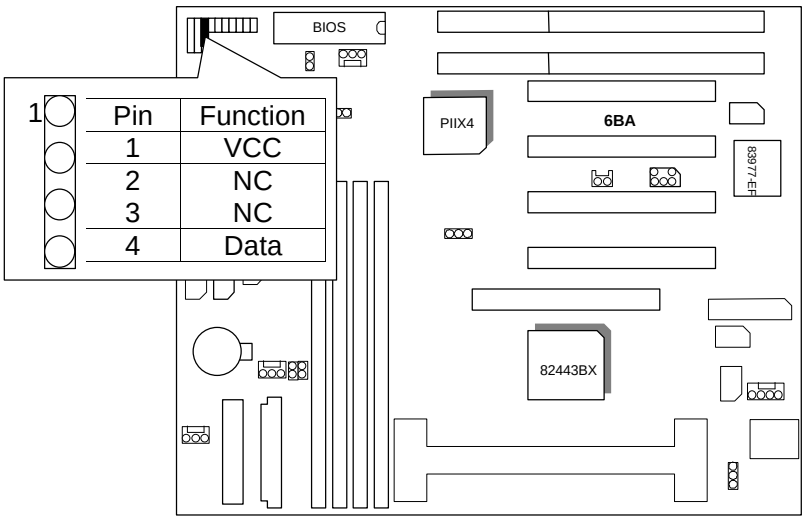
Pin	Function
1	IR Data Output
2	GND
3	IR Data Input
4	NC
5	POWER (+)

PWR : Power LED / Key-Lock Connector



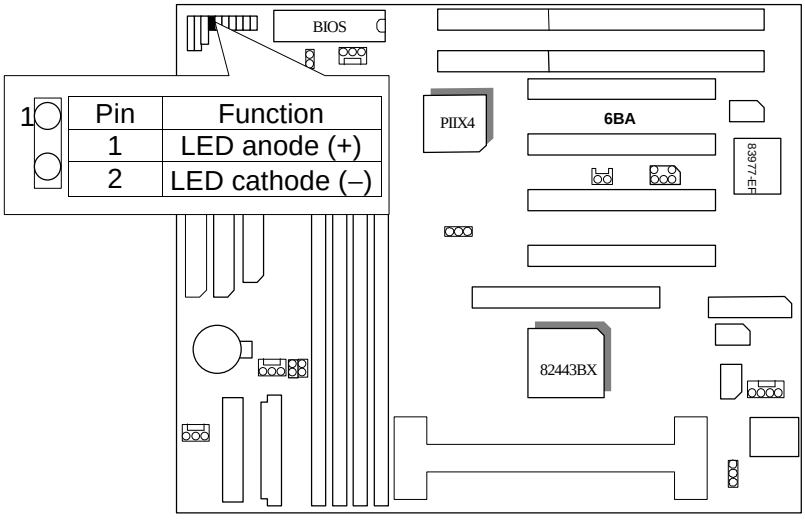
Pin	Function
1	LED anode (+)
2	LED cathode (–)
3	LED cathode (–)
4	Key Lock
5	GND

SPK : Speaker Connector



Pin	Function
1	VCC
2	NC
3	NC
4	Data

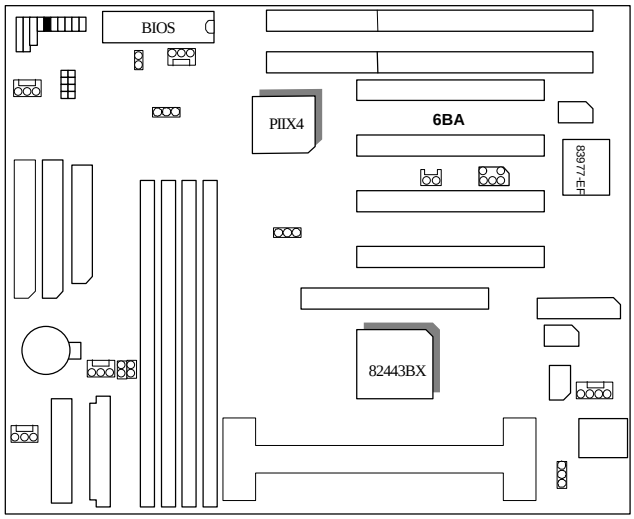
TD : Turbo LED Connector



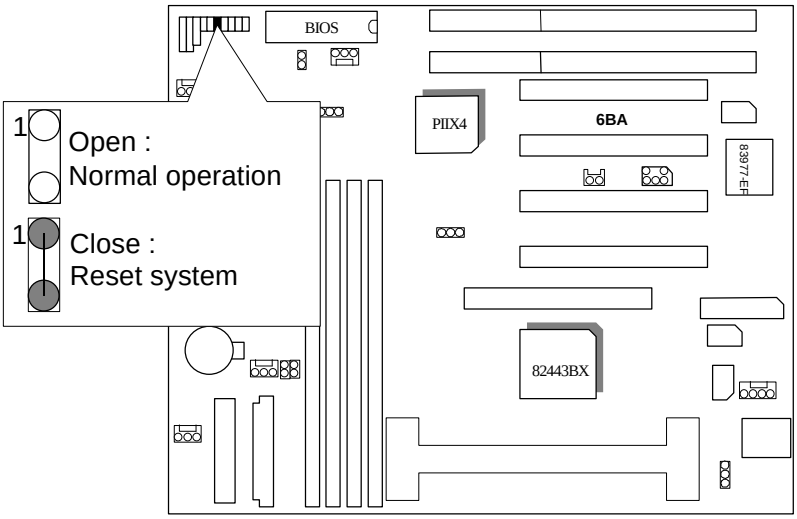
Pin	Function
1	LED anode (+)
2	LED cathode (–)

TB : Turbo Switch Connector

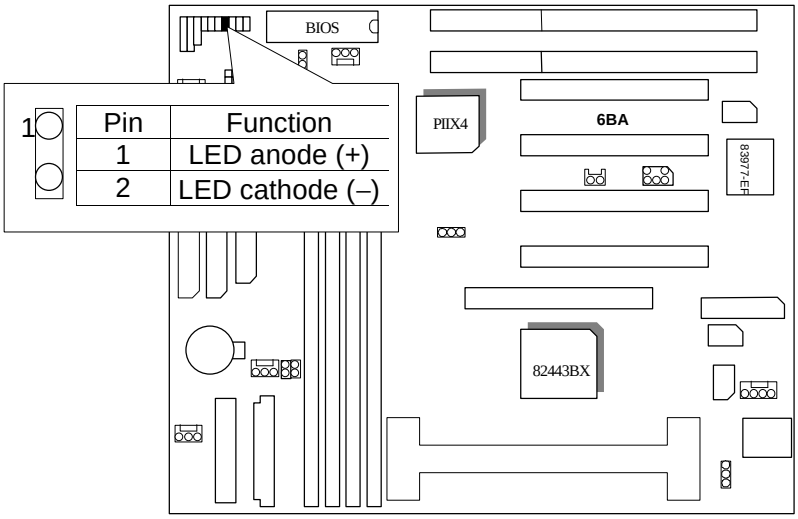
Function Reserved



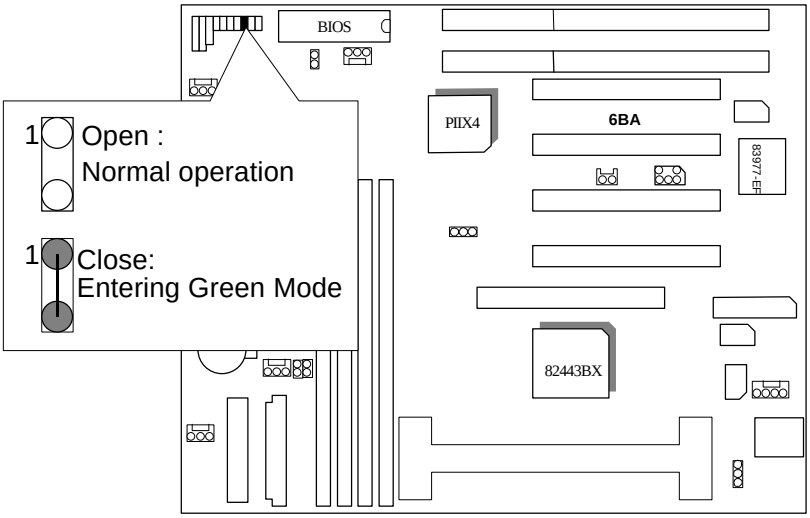
RST : Reset Switch



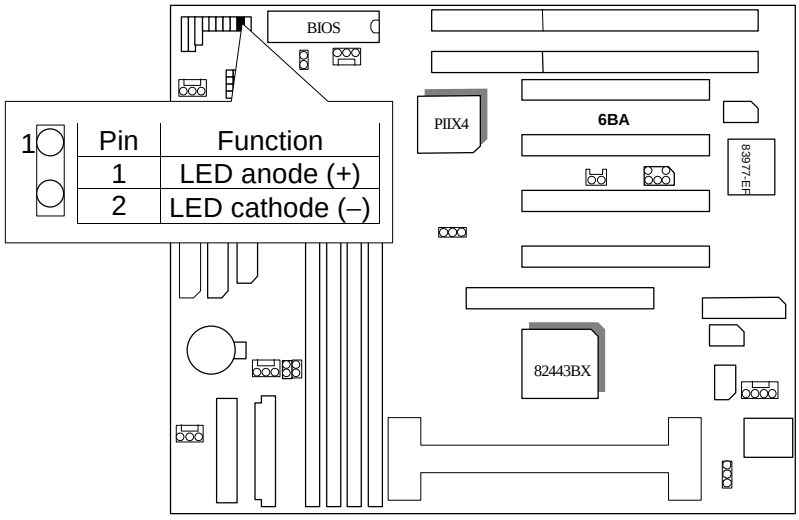
GD : Green Function LED



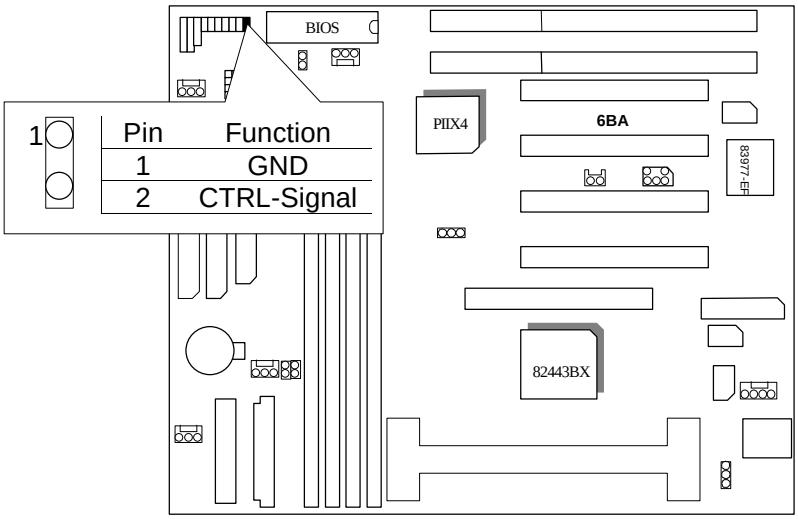
GN : Green Function Switch



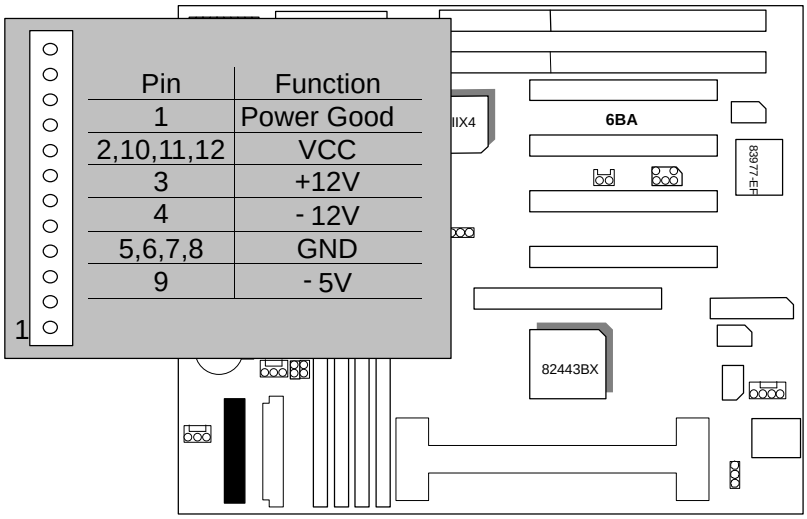
HD : IDE Hard Disk Active LED



Soft PWR : Soft Power Connector

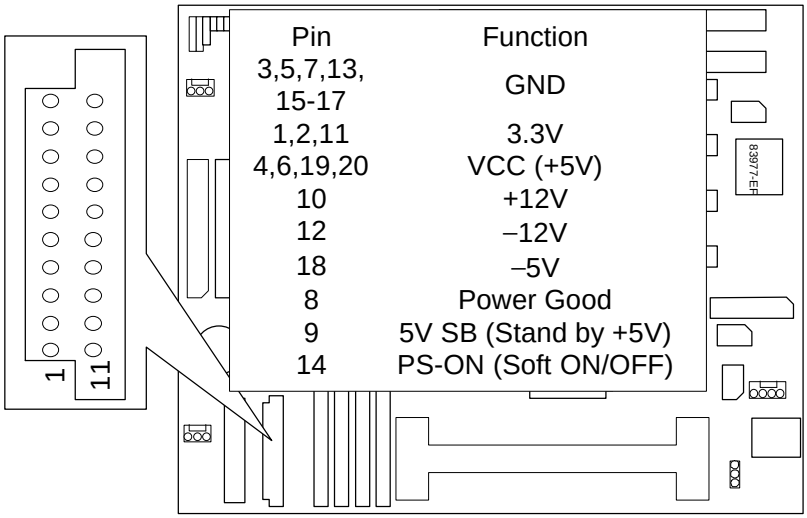


POWER : P8&P9 Power Connector



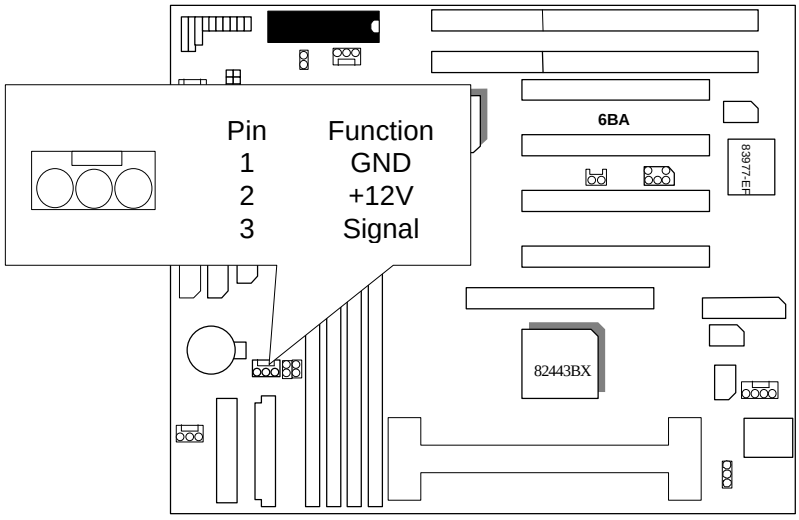
Pin	Function
1	Power Good
2,10,11,12	VCC
3	+12V
4	- 12V
5,6,7,8	GND
9	- 5V

ATX POWER : ATX POWER Connector

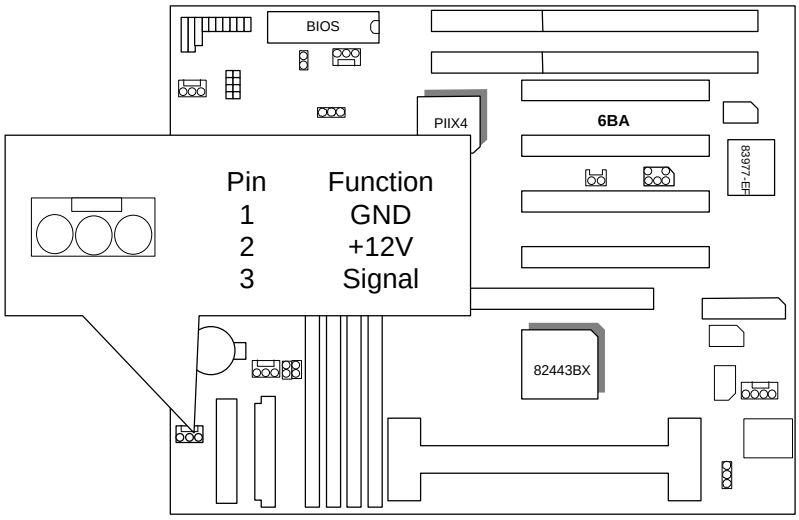


Pin	Function
3,5,7,13, 15-17	GND
1,2,11	3.3V
4,6,19,20	VCC (+5V)
10	+12V
12	–12V
18	–5V
8	Power Good
9	5V SB (Stand by +5V)
14	PS-ON (Soft ON/OFF)

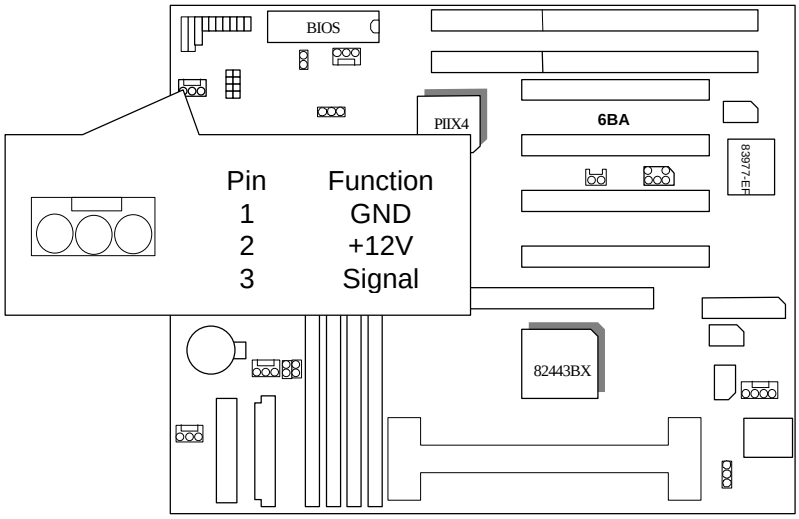
CPU FAN : CPU Cooling Fan Power Connector



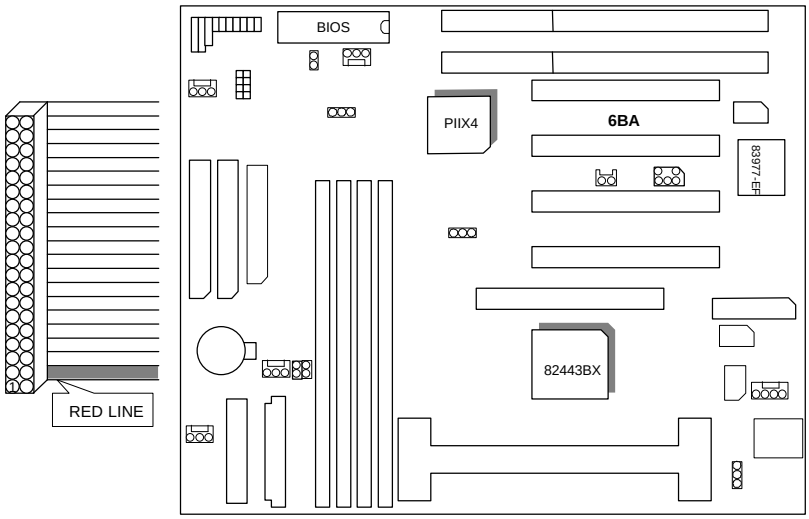
SYSTEM FAN : SYSTEM Fan Power Connector



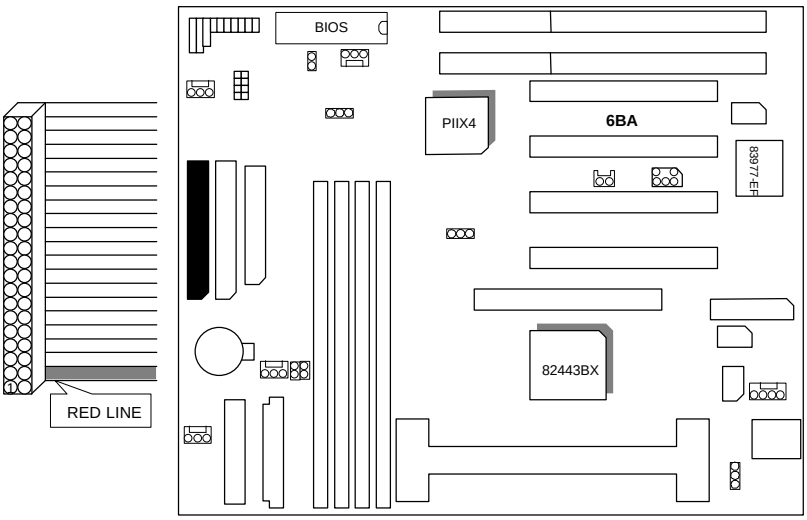
POWER FAN : POWER Fan Connector



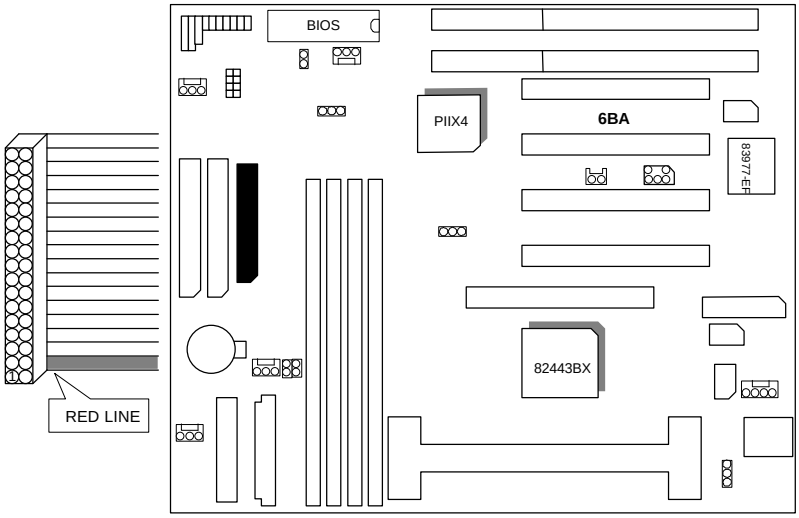
IDE1: Primary IDE port



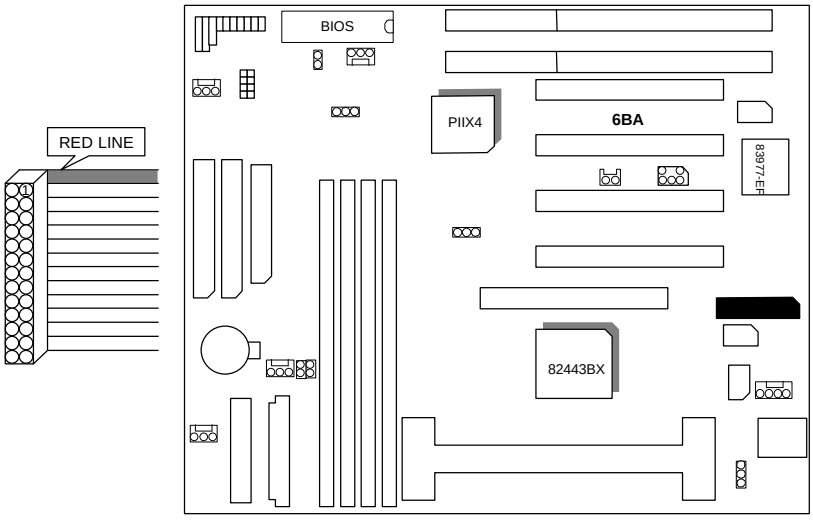
IDE2: Secondary IDE port



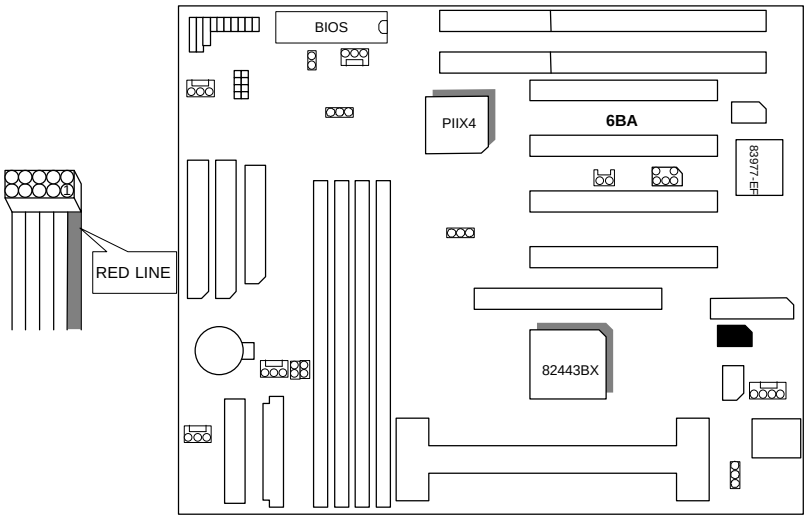
FLOPPY : FLOPPY PORT



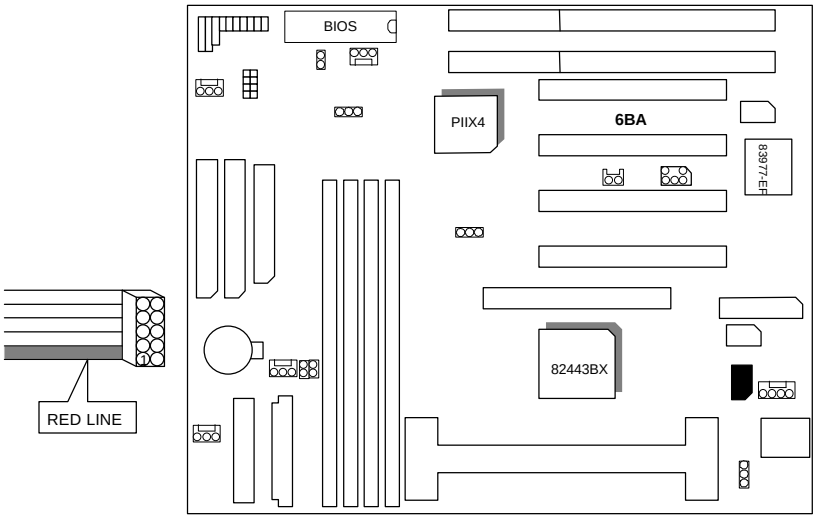
LPT : LPT PORT



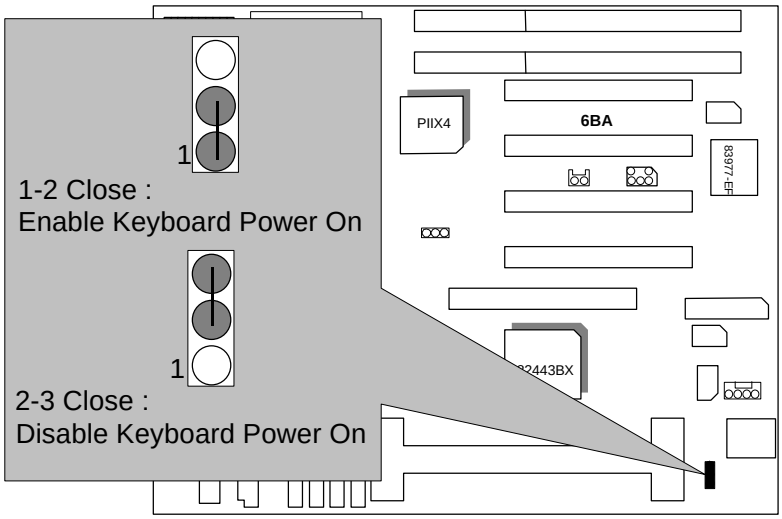
COMB : COM B PORT



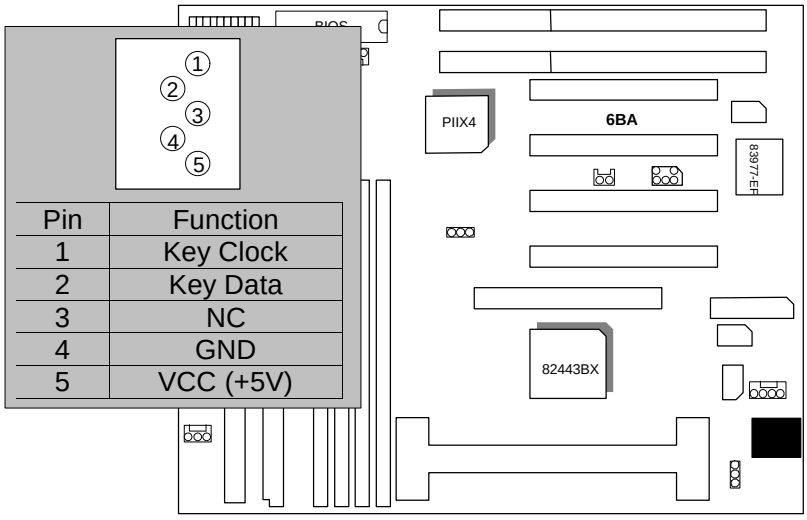
COMA : COM A PORT



JP1 : Keyboard Power On (for ATX Power Supply only)

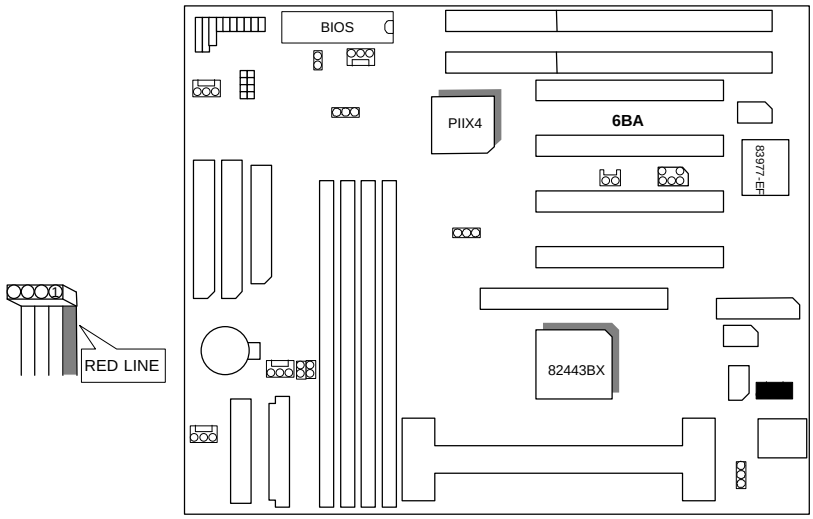


K.B : Keyboard Connector

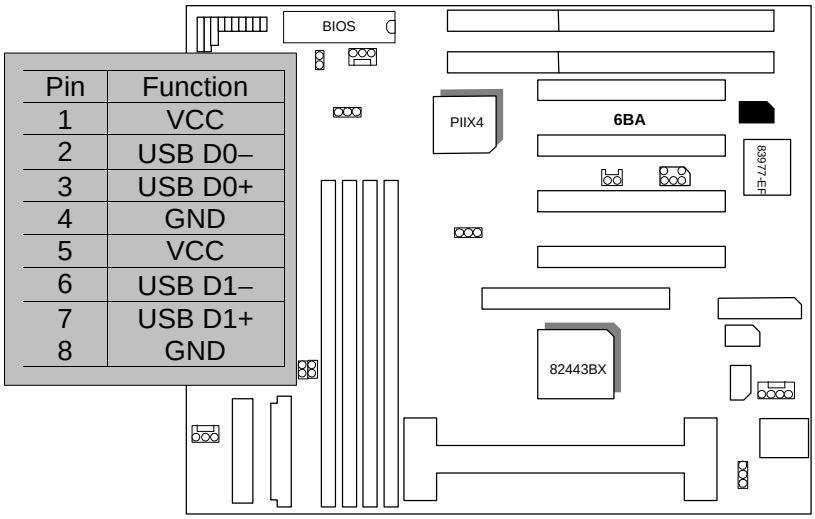


Pin	Function
1	Key Clock
2	Key Data
3	NC
4	GND
5	VCC (+5V)

J4 : PS/2 MOUSE

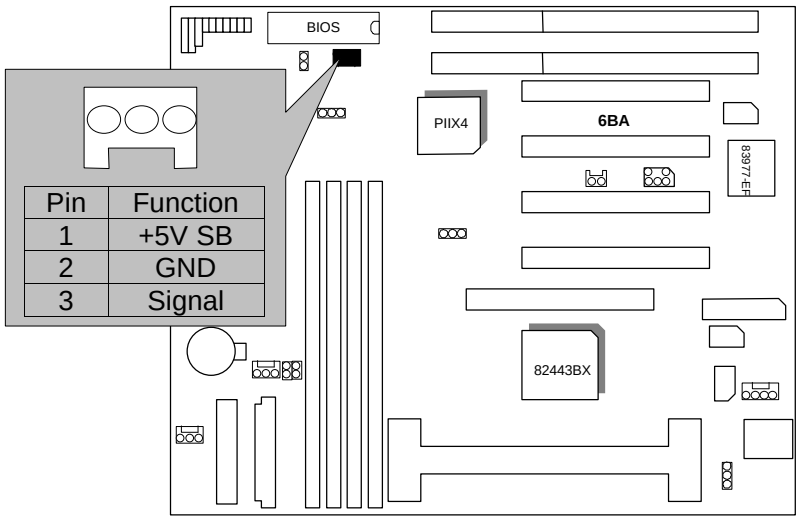


USB : USB Port



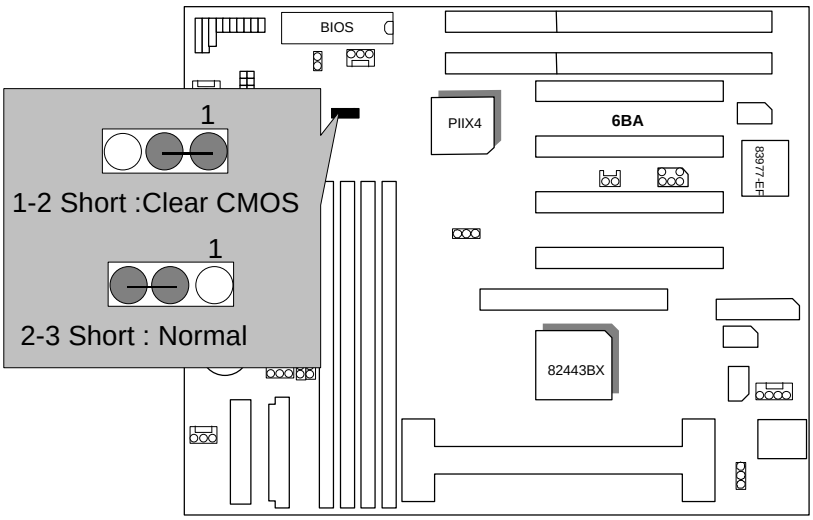
Pin	Function
1	VCC
2	USB D0–
3	USB D0+
4	GND
5	VCC
6	USB D1–
7	USB D1+
8	GND

J11 : Wake on Lan
(for ATX Power Supply only)

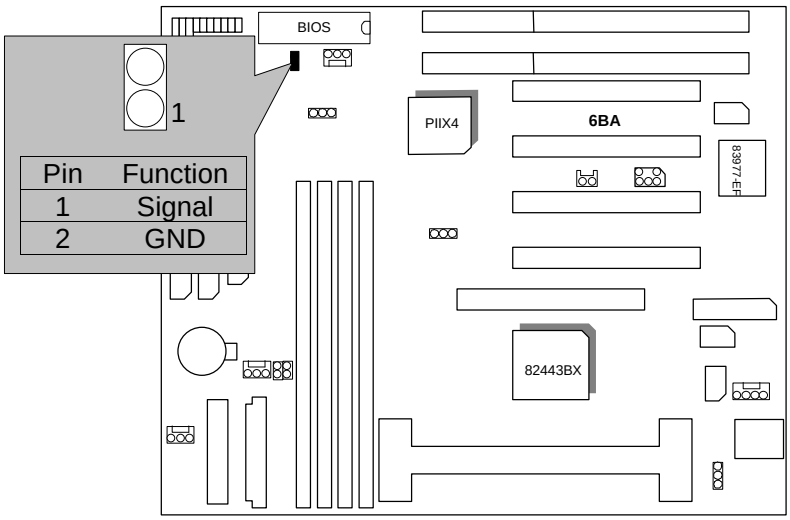


Pin	Function
1	+5V SB
2	GND
3	Signal

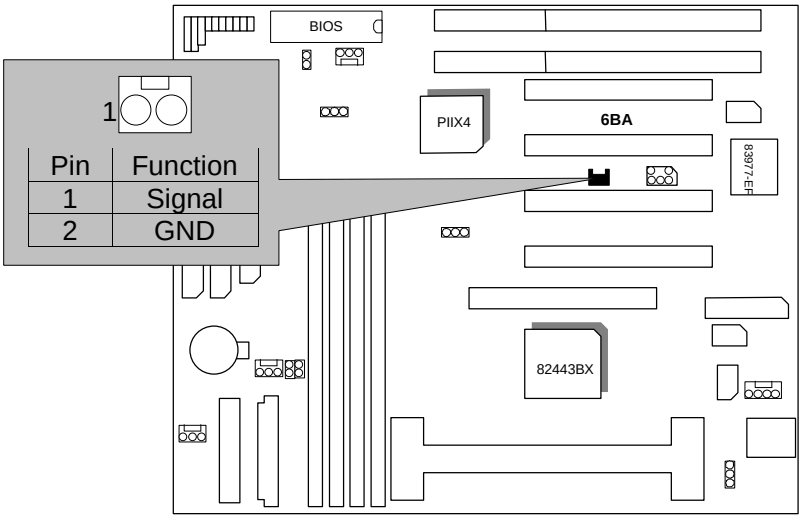
JP9 : CLEAR CMOS



JP10 : CASE OPEN (Optional)

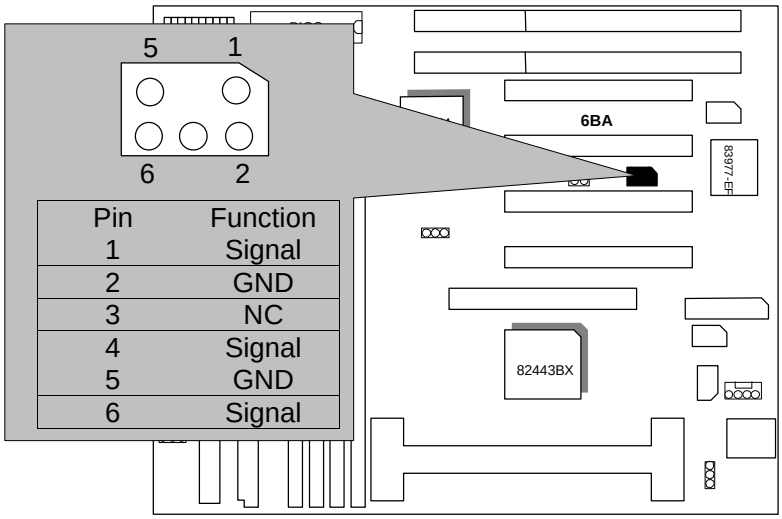


J19 : Internal Modem Card Ring PWR On



Pin	Function
1	Signal
2	GND

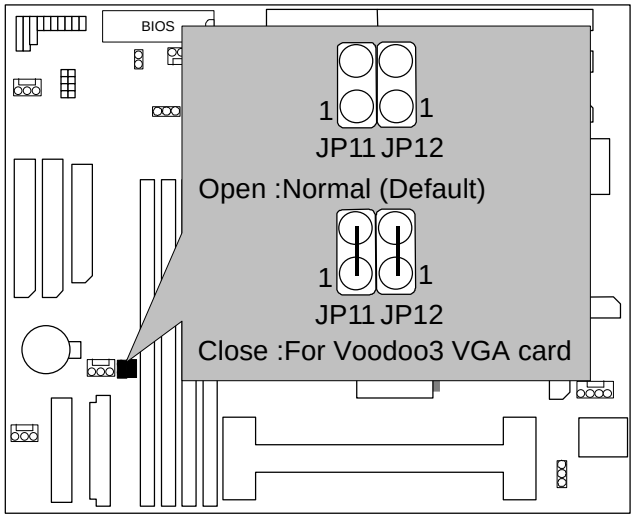
SB-LINK : For PCI Audio / Sound Card use only
(Creative PCI Sound Card Support)



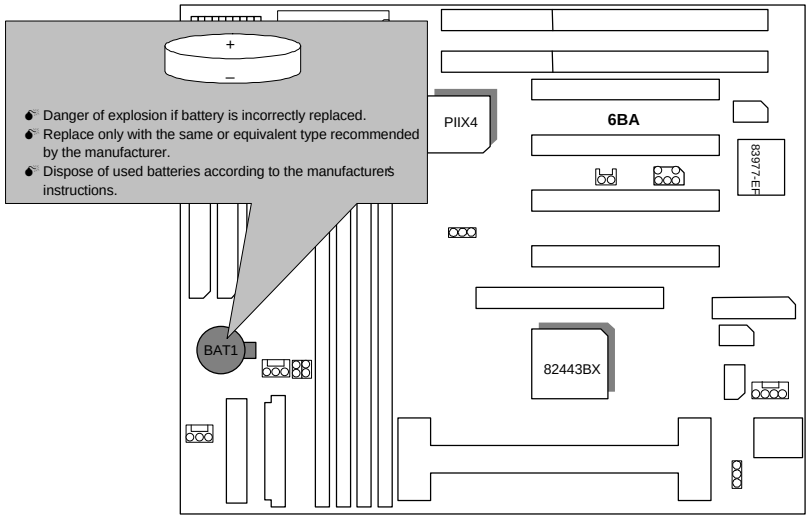
Pin	Function
1	Signal
2	GND
3	NC
4	Signal
5	GND
6	Signal

JP11 & JP12

(This function is support in PCB version 3.0 and above)



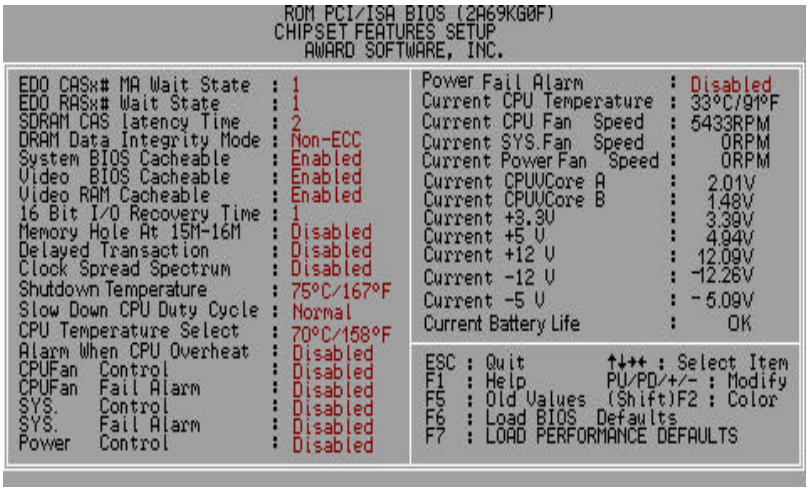
BAT1 : For Battery



III. Top Performance Test Setting:

The following performance data list is the testing results of some popular benchmark testing programs.

Users have to modify the value for each item in chipset features as follow for top performance setting.



These data are just referred by users, and there is no responsibility for different testing data values gotten by users. (The different Hardware & Software configuration will result in different benchmark testing results.)

- CPU Pentium® II processor
- DRAM (32x4)MB SDRAM (LGS GM72V661641CT7J)
- CACHE SIZE 512 KB included in CPU
- DISPLAY GA-601 AGP Display Card (4MB SGRAM)
- STORAGE Onboard IDE (Seagate ST36530A)

- O.S. Windows NT ™4.0
- DRIVER Display Driver at 1024 x 768 x 64k colors x 75Hz.
  TRIONES Bus Master IDE Driver 3.70

Processor	Intel Pentium® II	
	350MHz(100x3.5)	400MHz(100x4)
Winbench98		
CPU mark32	943	1080
FPU Winmark	1800	2060
Business Disk	2170	2190
Hi-End Disk	5810	5850
Business Graphics	203	223
Hi-End Graphics	218	241
Winstone98		
Business	35.3	37.3
Hi-End	39.7	42.8

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1. INTRODUCTION

1.1. PREFACE

Welcome to use the **6BA** motherboard. It is a Pentium® II / III / Celeron™ Processor based PC / AT compatible system with AGP / PCI / ISA Bus, and has been designed to be the fastest PC / AT system. There are some new features allow you to operate the system with just the performance you want.

This manual also explains how to install the motherboard for operation, and how to set up your CMOS CONFIGURATION with BIOS SETUP program.

1.2. KEY FEATURES

- Intel Pentium® II / III / Celeron™ Processor based PC / AT compatible main board.
- Slot 1 supports Pentium® II / III / Celeron™ Processor running at 233-633 MHz.
- Intel 440BX chipset, Supports SDRAM / Ultra DMA/33 IDE.
- Supports 4xDIMMs using 3.3V SDRAM DIMM module.
- Supports 16MB ~ 1 GB SDRAM memory on board.
- Supports ECC or Non-ECC type DRAM module.
- 1xAGP slot, 4xPCI Bus slots, 2xISA Bus slots.
- Supports 2 channels Ultra DMA 33 IDE ports for 4 IDE Devices.
- Supports 2xCOM (16550), 1xLPT, 1x1.44MB Floppy port.
- Supports USB port & PS/2 Mouse port.
- Licensed AWARD BIOS, 2M bits FLASH RAM.
- 25.4 cm x 22.2 cm BABY AT SIZE form factor, 4 layers PCB.

1.3. PERFORMANCE LIST

The following performance data list is the testing results of some popular benchmark testing programs.

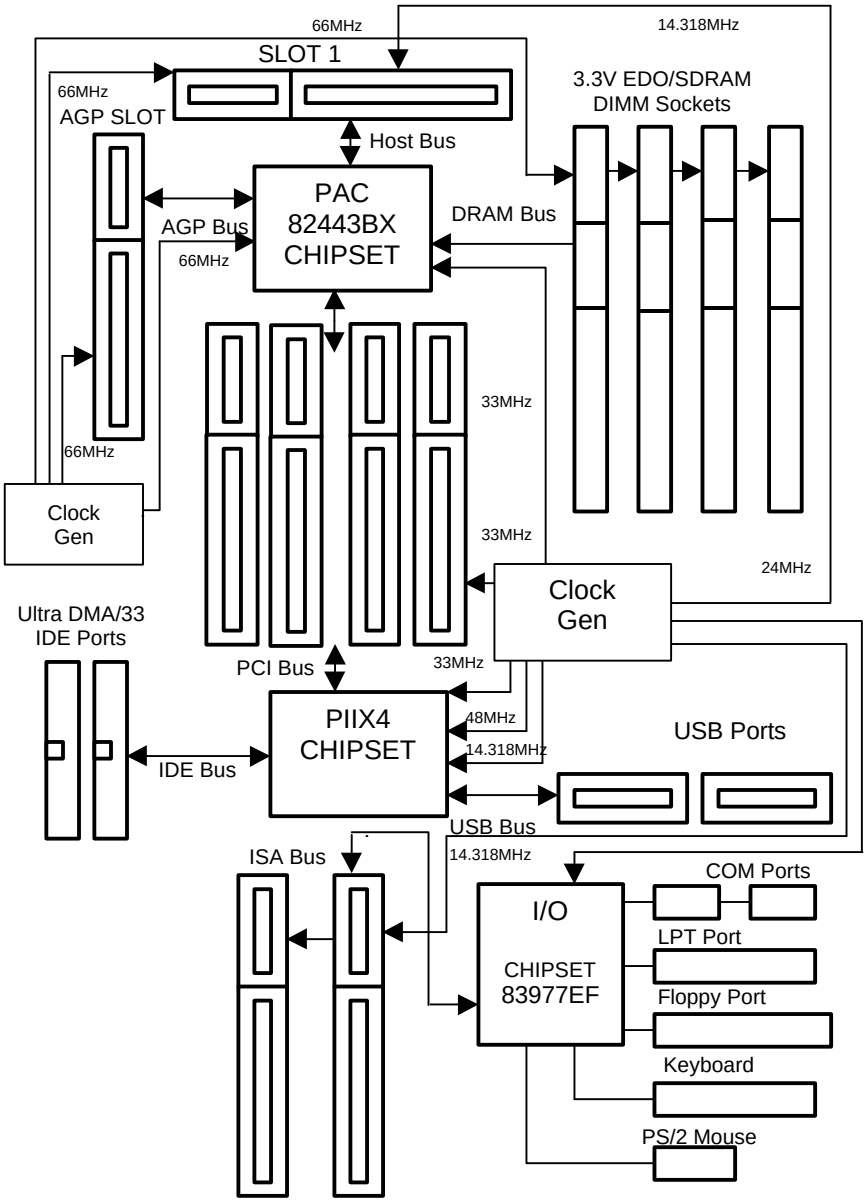
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Business Disk	2170	2190
Hi-End Disk	5810	5850
Business Graphics	203	223
Hi-End Graphics	218	241
Winstone98		
Business	35.3	37.3
Hi-End	39.7	42.8

1.4. BLOCK DIAGRAM



1.5. INTRODUCE THE Pentium â II / III Processor

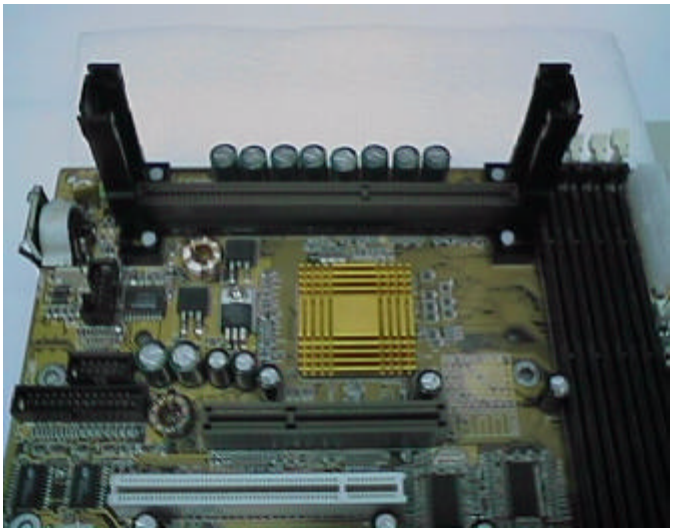


Figure 1: Universal Retention Mechanism & attach Mount



Figure 2:OEM Pentium® II Processor

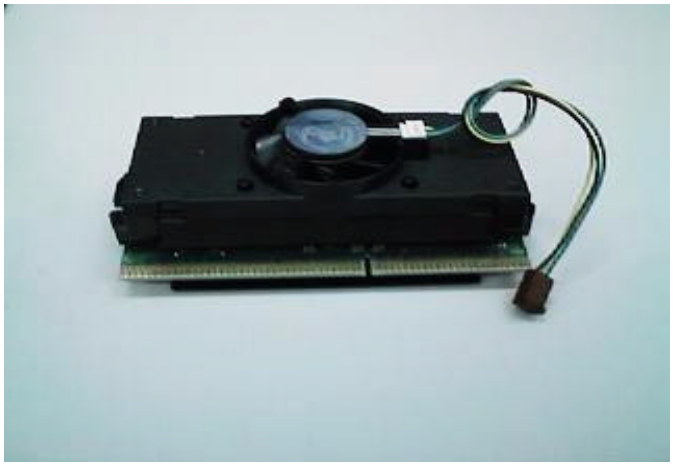


Figure 3: OEM Pentium® III Processor

1.6 What is AGP?

The Accelerated Graphics Port (AGP) is a new port on the Host-To-PCI bridge device that supports an AGP port. The main purpose of the AGP port is to provide fast access to system memory.

The AGP port can be used either as fast PCI port (32-bits at 66MHz vs. 32-bits at 33MHz) or as an AGP port which supports 2x data-rate, a read queue, and side band addressing. When the 2x-data rate is used the port can transmit data at 533MB/sec (66.6*2*4). The read-queue can be used to pipeline reads – removing the effects of the reads-latency. Side band addressing can be used to transmit the data address on a separate line in order to speed up the transaction.

2. SPECIFICATION

2.1. HARDWARE

- CPU
  - Pentium® II / III / Celeron™ Processor 233 – 633MHz.
  - 242 pins 66/100MHz slot1 on board.
- SPEED
  - 66 / 100MHz system speed.
  - 66 MHz AGP bus speed. (133MHz 2*mode)
  - 33 MHz PCI-Bus speed.
  - 8 MHz AT bus speed.
- DRAM MEMORY
  - 4 banks 168 pins DIMM module sockets on board.
  - Use 16 / 32 / 64 / 128 / 256 MB DIMM module DRAM.
  - Supports 16MB ~ 1 GB SDRAM.
  - Supports 3.3V SDRAM.
  - Supports ECC or Non-ECC type DRAM.
- CACHE MEMORY
  - 32 KB 1st cache memory included in CPU.
  - 128KB / 512 KB L2 cache memory included in CPU.
  - Supports DIB speed mode for L2 Cache.
- I/O BUS SLOTS
  - 4 33MHz Master / Slave PCI-BUS.
  - 2 8MHz 16 bits ISA BUS.
  - 1 66MHz / 133MHz AGP bus.
- IDE PORTS
  - 2 Ultra DMA 33 Bus Master IDE channels on board.(Using IRQ14,15)
  - Support Mode 3,4 IDE & ATAPI CD – ROM.
- I/O PORTS
  - Supports 2 16550 COM ports.
  - Supports 1 LPT port.
  - Supports 1 Floppy port.
  - Supports 2 USB ports.
  - Supports PS/2 Mouse.

- GREEN FUNCTION
  - Suspend mode support.
  - Green switch & ACPI LED support.
  - IDE & Display power down support.
  - Monitor all IRQ / DMA / Display / I/O events.
- BIOS
  - 2M bits FLASH RAM.
  - Supports Plug & Play, DMI Function.
- DIMENSION
  - BABY AT Form Factor, 4 layers PCB.

2.2. SOFTWARE

- DRIVER
  - Bus Master IDE Driver.
  - Suspend to HD utility. (Optional)
  - INTEL LDCM®.
- BIOS
  - Licensed AWARD BIOS.
  - AT CMOS Setup, BIOS / Chipset Setup, Green Setup, Hard Disk Utility included.
- O.S.
  - Operation with MS-DOS®, Windows®95, Windows®98, WINDOWS™ NT, OS/2, NOVELL and SCO UNIX.

2.3. ENVIRONMENT

- Ambient Temp. – 0°C to +50°C (Operating).
- Relative Hum. – 0 to +85% (Operating).
- Altitude – 0 to 10,000 feet (Operating).
- Vibration – 0 to 1,000 Hz.
- Electricity – 4.9 V to 5.2 V. (Max. 20A current at 5V.)

3. HARDWARE INSTALLATION

3.1. UNPACKING

The main board package should contain the following:

- The **6BA** main board.
- Universal Retention Mechanism & Attach Mount
- USER'S MANUAL for main board.
- Cable set for IDE, Floppy & I/O devices.
- CD for main board Utilities.

The main board contains sensitive electric components, which can be easily damaged by static electricity, so the main board should be left in its original packing until it is installed.

Unpacking and installation should be done on a grounded anti-static mat. The operator should be wearing an anti static wristband, grounded at the same point as the anti-static mat.

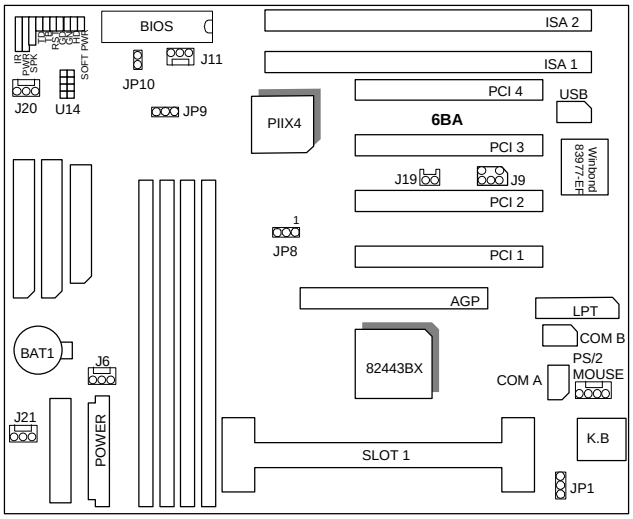
Inspect the main board carton for obvious damage. Shipping and handling may cause damage to your board. Be sure there are no shipping and handling damages on the board before proceeding.

After opening the main board carton, extract the system board and place it only on a grounded anti-static surface component side up. Again inspect the board for damage. Press down on all of the socket IC's to make sure that they are properly seated. Do this only on with the board placed on a firm flat surface.

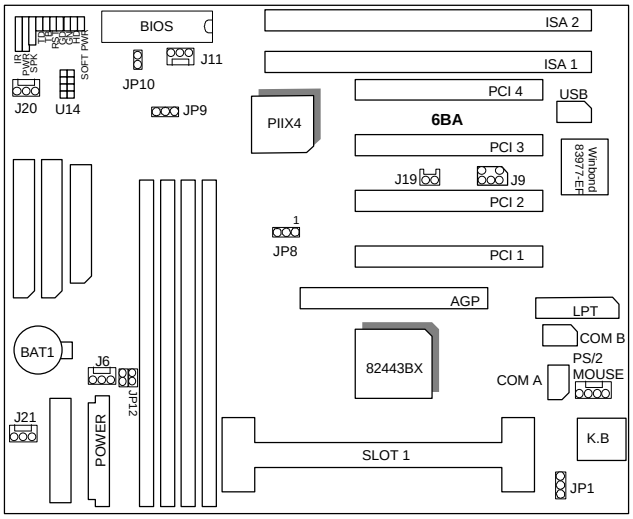
DO NOT APPLY POWER TO THE BOARD IF IT HAS BEEN DAMAGED.

3.2. MAINBOARD LAYOUT

PCB Ver : 2.9



PCB Ver : 3.0



≺Figure 3.1≻

3.3. QUICK REFERENCE FOR JUMPERS & CONNECTORS

♦ I/O Ports Connector	
USB	USB port.
IDE1	For Primary IDE port.
IDE2	For Secondary IDE port.
KB	For Keyboard port.
PS/2	For PS/2 Mouse port.
FLOPPY	For Floppy port
COMB	For Serial port2 (COM B).
COMA	For Serial port1 (COM A).
POWER	For AT Power Connector.
ATX POWER	For ATX Power Connector.
LPT	For LPT port.

♦ CPU
For Pentium® II / III / Celeron™ processor installed

♦ IR : INFRARED Connector (IR) -- Function Option	
Pin	Function
1	IR Data Output
2	GND
3	IR Data Input
4	NC
5	POWER (+)

♦ PWR : POWER ON LED/ Key-Lock	
Pin	Function
1	LED anode (+)
2	LED cathode (–)
3	LED cathode (–)
4	Key-Lock
5	GND

♦ SPK : SPEAKER Connector	
Pin	Function
1	VCC
2	NC
3	NC
4	Data

♦ TD : Turbo LED Connector	
Pin	Function
1	LED anode (+)
2	LED cathode (–)

♦ RST : RESET Switch	
Open	Normal operation
Close	Reset system

♦ GD : Green LED Connector	
Pin	Function
1	LED anode (+)
2	LED cathode (–)

♦ GN : GN-SW	
Open	Normal operation
Close	Enter Green Mode

♦ HD : Hard Disk active LED (HD-LED)	
Pin	Function
1	LED anode (+)
2	LED cathode (–)

♦ Soft PWR : Soft Power Switch	
Pin	Function
1	GND
2	CTRL-Signal

♦ J6 :CPU FAN (CPU cooling FAN Power Connector)	
Pin	Function
1	GND.
2	+12V
3	Signal

♦ J20 : SYSTEM FAN	
Pin	Function
1	GND.
2	+12V
3	Signal

♦ JP10 : CASE OPEN (Optional)	
Pin	Function
1	Signal
2	GND

♦ JP9 : Clear CMOS	
Pin	Function
1-2	Clear CMOS.
2-3	Normal

♦ J19 : Internal Modem Card Ring PWR On	
Pin	Function
1	Signal
2	GND

♦ J21 : Power FAN	
Pin	Function
1	GND.
2	+12V
3	Signal

♦ JP1 : Keyboard Power On Selection	
Pin	Function
1-2	Enabled Keyboard power on.
2-3	Disabled Keyboard power on.

♦ J11 : Wake on Lan	
Pin	Function
1	+5V SB
2	GND
3	Signal

♦ SB-LINK : For PCI Audio / Sound Card use only	
Pin	Function
1	Signal
2	GND
3	NC
4	Signal
5	GND
6	Signal

♦ JP11&JP12(This function is support in PCB version 3.0 and above)	
Pin No.	Function
Open	Normal
Close	For Voodoo3 VGA card

3.4. DRAM INSTALLATION

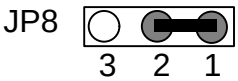
The main board can be installed with 16 / 32 / 64 / 128 / 256 MB 168 pins DIMM module DRAM. When system bus speed is set to 100MHz, 100MHz SDRAM is required. The DRAM memory system on main board consists of bank 0, 1, 2 & bank 3.

Since 168 pins DIMM module is 64 bits width, therefore 1 piece of DIMM module may match a 64 bits system. The total memory size is 16 MB ~ 1 GB SDRAM. The DRAM installation position refer to Figure 3.1, and notice the Pin 1 of DIMM module must match with the Pin 1 of DIMM socket. Insert the DRAM DIMM module into the DIMM socket at Vertical angle. If there is a wrong direction of Pin 1, the DRAM DIMM module could not be inserted into socket completely.

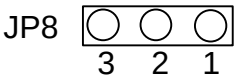
3.5. CPU SPEED SETUP

The system bus speed can be set to 66.6MHz or 100MHz form the jumper (**JP8**). The user can change the DIP SWITCH selection to set up the CPU speed for different processors. The CPU speed must match with the frequency RATIO and Front Side Bus (FSB) speed. It will cause system hanging up if the frequency RATIO and FSB Speed do not match with the CPU.

Set system speed to 66MHz: JP8 pin 1-2 short will cause system always run at 66 MHz FSB (Front Side Bus).



Set system speed to 100MHz: JP8 all pins open will cause system always run at 100MHz FSB.



Set system speed to Auto: JP8 pin 2-3 short will detect system speed 66/100MHz FSB automatically.

JP8 

3 2 1

FREQ. RATIO	DIP SWITCH			
	1	2	3	4
X 3	ON	OFF	ON	ON
X 3.5	OFF	OFF	ON	ON
X 4	ON	ON	OFF	ON
X 4.5	OFF	ON	OFF	ON
X 5	ON	OFF	OFF	ON
X 5.5	OFF	OFF	OFF	ON
X 6	ON	ON	ON	OFF
X 6.5	OFF	ON	ON	OFF
X 7	ON	OFF	ON	OFF
X 7.5	OFF	OFF	ON	OFF
X 8	ON	ON	OFF	OFF
X 8.5	OFF	ON	OFF	OFF
X 9	ON	OFF	OFF	OFF
X 9.5	OFF	OFF	OFF	OFF

The CPU is a sensitive electric component and it can be easily damaged by static electricity, so users must keep it away from metal surface when the CPU is installed onto main board.

3.6. CMOS RTC & ISA CFG CMOS SRAM

There're RTC & CMOS SRAM on board; they have a power supply from external battery to keep the DATA inviolate & effective. The RTC is a REAL-TIME CLOCK device, which provides the DATE & TIME to system. The CMOS SRAM is used for keeping the information of system configuration, so the system can automatically boot OS every time. Since the lifetime of internal battery is 5 years, the user can change a new Battery to replace old one after it cannot work.

- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent type recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

3.7. SPEAKER CONNECTOR INSTALLATION

There is a speaker in AT system for sound purpose. The 4 - Pins connector **SPK** is used to connect speaker. Anode connects +, Cathode connects –.

3.8. HARDWARE RESET SWITCH CONNECTOR INSTALLATION

The RESET switch on panel provides users with HARDWARE RESET function. The system will do a cold start after the RESET button is pressed and released by user. The RESET switch is a 2 PIN connector and should be installed to **RST** on main board.

3.9. POWER LED CONNECTOR INSTALLATION

System has power LED lamp on the panel of case. The power LED will light on/off or flash to indicate which step on the system. The connector should be connected to PWR of main board in correct direction.

3.10. IDE & ATAPI DEVICE INSTALLATION

There are two-Enhanced PCI IDE ports (**IDE1, IDE2**) on board, which following ATAPI standard SPEC. Any one IDE port can connected to two ATAPI devices (IDE Hard Disk, CD-ROM & Tape Driver), so total four ATAPI devices can exist in a system. The **HD** is the active LED port for ATAPI devices.

3.11. PERIPHERAL DEVICE INSTALLATION

After the I/O device installation and jumpers setup, the main board can be mounted into the case and fixed by screw. To complete the main board installation, the peripheral device could be installed now. The basic system needs a display interface card. If the PCI - Bus device is to be installed in the system, any one of four PCI - Bus slots can be used.

3.12. KEYBOARD & PS/2 MOUSE INSTALLATION

The main board supports PS/2 Mouse. The BIOS will auto detect whether the PS/2 Mouse is installed or not & assign IRQ12 for PS/2 Mouse port if it is installed. After installing the peripheral device, the user should check everything again, and prepare to power-on the system.

4. BIOS CONFIGURATION

Award's BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS SRAM so that it retains the Setup information when the power is turned off.

4.1. ENTERING SETUP

Power ON the computer and press <Del> immediately will allow you to enter Setup. If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" bottom on the system case. You may also restart by simultaneously press <Ctrl>, <Alt>, and <Del> keys.

4.2. CONTROL KEYS

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc key	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Change color from total 16 colors
F3 key	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

4.3. GETTING HELP

4.3.1. Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

4.3.2. Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

4.4. THE MAIN MENU

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 4.1) will appear on the screen. The Main Menu allows you to select from nine setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

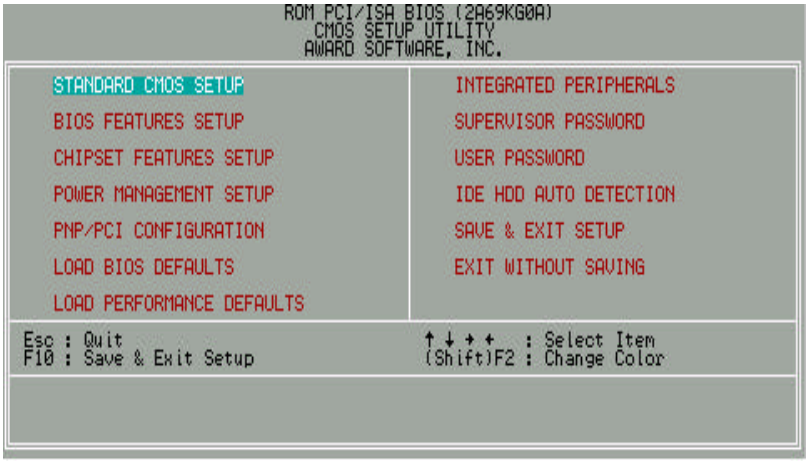


Figure 4.1: Main Menu

- Standard CMOS setup

  This setup page includes all the items in standard compatible BIOS.

- BIOS features setup

  This setup page includes all the items of Award special enhanced features.

- Chipset features setup

  This setup page includes all the items of chipset special features.

- Power management setup

  This setup page includes all the items of Green function features.

- PNP/PCI configuration

  This setup page includes all the configurations of PCI & PnP ISA resources.

- Load Bios defaults

  Bios Defaults indicates the value of the system parameter which the system would be in the safe configuration.

- Load Performance defaults

  Performance Defaults indicates the value of the system parameters which the system would be in best performance configuration.

- Integrated peripherals

  This setup page includes all onboard peripherals.

- Supervisor password

  Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

- User password

  Change, set, or disable password. It allows you to limit access to the system.

- IDE HDD auto detection

  Automatically configure hard disk parameters.

- Save & exit setup

  Save CMOS value settings to CMOS and exit setup.

- Exit without saving

  Abandon all CMOS value changes and exit setup.

4.5. STANDARD CMOS SETUP MENU

The items in Standard CMOS Setup Menu (Figure 4.2) are divided into 9 categories. Each category includes no, one or more than one setup items. Use the arrows to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

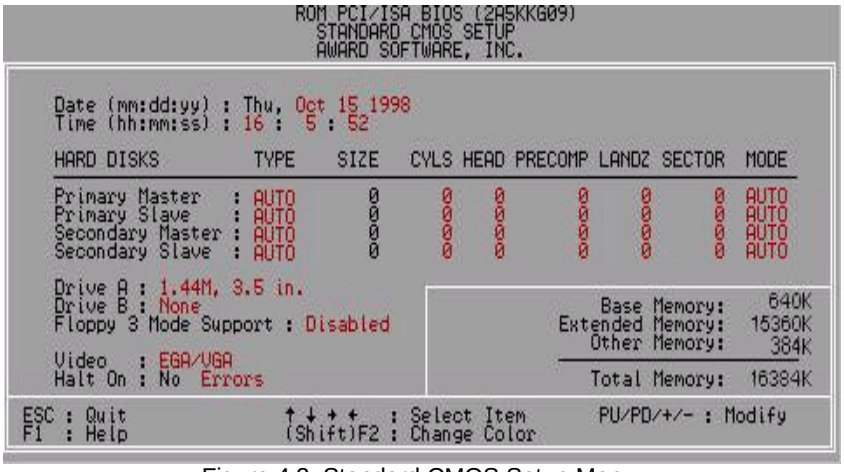


Figure 4.2: Standard CMOS Setup Menu

- Date

  The date format is <day>, <month> <date> <year>.

day	The day, from Sun to Sat, determined by the BIOS and is display-only
month	The month, Jan. through Dec.
date	The date, from 1 to 31 (or the maximum allowed in the month)
year	The year, from 1994 through 2079

- Time

  The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

- Primary HDDs / Secondary HDDs

  The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and user definable type. User type is user-definable; Auto type which will automatically detect HDD type.

  Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

  If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

CYLS.	Number of cylinders
HEADS	number of heads
PRECOMP	write precomp
LANDZONE	Landing zone
SECTORS	number of sectors

If a hard disk has not been installed select NONE and press <Enter>.

- Drive A type / Drive B type

  The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

None	No floppy drive installed
360K, 5.25 in.	5.25 inch PC-type standard drive; 360K byte capacity.
1.2M, 5.25 in.	5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled).
720K, 3.5 in.	3.5 inch double-sided drive; 720K byte capacity
1.44M, 3.5 in.	3.5 inch double-sided drive; 1.44M byte capacity.
2.88M, 3.5 in.	3.5 inch double-sided drive; 2.88M byte capacity.

- Floppy 3 Mode Support (for Japan Area)

Disabled	Normal Floppy Drive.
Drive A	Drive A is 3 mode Floppy Drive.
Drive B	Drive B is 3 mode Floppy Drive.
Both	Drive A & B are 3 mode Floppy Drives.

- Video

The category detects the type of adapter used for the primary system monitor that must match your video display card and monitor. Although secondary monitors are supported, you do not have to select the type in setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA, or PGA monitor adapters
CGA 40	Color Graphics Adapter, power up in 40 column mode
CGA 80	Color Graphics Adapter, power up in 80 column mode
MONO	Monochrome adapter, includes high resolution monochrome adapters

- Halt on

The category determines whether the computer will stop if an error is detected during power up.

NO Errors	The system boot will not stop for any error that may be detected and you will be prompted
All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors

- Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512 K for systems with 512 K memory installed on the motherboard, or 640 K for systems with 640 K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

Expanded Memory

Expanded Memory in memory defined by the Lotus/ Intel / Microsoft (LIM) standard as EMS.
Many standard DOS applications can not utilize memory above 640 K; the Expanded Memory Specification (EMS) swaps memory, which not utilized by DOS with a section, or frame, so these applications, can access all of the system memory.

Memory can be swapped by EMS is usually 64 K within 1 MB or memory above 1 MB, depends on the chipset design.

Expanded memory device driver is required to use memory as Expanded Memory.

Other Memory

This refers to the memory located in the 640 K to 1024 K address space. This is memory that can be used for different applications.

DOS uses this area to load device drivers to keep as much base memory free for application programs. Most use for this area is Shadow RAM.

4.6. BIOS FEATURES SETUP



Figure 4.3: BIOS Features Setup

- Virus warning

  If it is set to enable, the category will flash on the screen when there is any attempt to write to the boot sector or partition table of the hard disk drive. The system will halt and the warning message will appear in the mean time. You can run anti-virus program to locate the problem.

  Default value is Disabled.

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

- CPU Internal Cache / External Cache

  These two categories speed up memory access. However, it depends on CPU / chipset design. The default value is Enabled.

Enabled	Enable cache
Disabled	Disable cache

- CPU L2 Cache ECC Checking

The default value is Disabled.

Enabled	Enable CPU L2 Cache ECC Checking
Disabled	Disable CPU L2 Cache ECC Checking

- Quick Power On Self Test

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

The default value is Enabled.

Enabled	Enable quick POST
Disabled	Normal POST

- CPU Update Data

The default value is Enabled.

Enabled	Enable CPU Update Data
Disabled	Normal CPU Update Data

- Boot From LAN First

The default value is Enabled.

Enabled	Enable Boot From LAN First
Disabled	Disable Boot From LAN First
Auto	Boot From LAN First set to Auto

- Boot Sequence

This category determines which drive computer searches first for the disk operating system (i.e., DOS). Default value is A, C, SCSI.

X1, X2, X3	System will first search for X1 disk drive then X2 disk drive and then X3 disk drive.

- Swap Floppy Drive

The default value is Disabled.

Enabled	Floppy A & B will be swapped under DOS
Disabled	Floppy A & B will be normal definition

- VGA Boot From

The default value is AGP.

AGP	VGA Boot From AGP
PCI	VGA Boot From PCI

- Boot Up Floppy Seek

During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360 K type is 40 tracks 720 K, 1.2 M and 1.44 M are all 80 tracks. The default value is Enabled.

Enabled	BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720 K, 1.2 M or 1.44 M drive type as they are all 80 tracks
Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360 K

- Boot Up NumLock Status

The default value is On.

On	Keypad is number keys
Off	Keypad is arrow keys

- Typematic Rate Setting

The default value is Disabled.

Enabled	Enable Keyboard Typematic rate setting.
Disabled	Disable Keyboard Typematic rate setting.

- Typematic Rate (Chars / Sec)

The default value is 6.

6-30	Set the maximum Typematic rate from 6 chars. Per second to 30 chars. Per second.

- Typematic Delay (Msec)

The default value is 250.

250-1000	Set the time delay from first key to repeat the same key in to computer.

- Security Option

This category allows you to limit access to the system and Setup, or just to Setup. The default value is Setup.

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

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

- PCI/VGA Palette Snoop

The default value is Disabled.

Enabled	For having Video Card on ISA Bus and VGA Card on PCI Bus.
Disabled	For VGA Card only.

- Assign IRQ For VGA

The default value is Enabled.

Enabled	For having Video Card on ISA Bus and VGA Card on PCI Bus.
Disabled	For VGA Card only.

- OS Select For DRAM>64MB

The default value is Non-OS2.

Non-OS2	Using non-OS2 operating system.
OS2	Using OS2 operating system and DRAM>64MB.

- HDD S.M.A.R.T. Capability

The default value is Disabled.

Enabled	Enabled HDD S.M.A.R.T. Capability
Disabled	Disabled HDD S.M.A.R.T. Capability

- Report No FDD For WIN 95

The default value is No.

No	Function disabled
Yes	Report No FDD For WIN 95

- Video BIOS Shadow

It determines whether video BIOS is able to copy to RAM, however, it is optional from chipset design. Video Shadow will increase the video speed. The default value is Enabled.

Enabled	Video shadow is enabled
Disabled	Video shadow is disabled

4.7. CHIPSET FEATURES SETUP

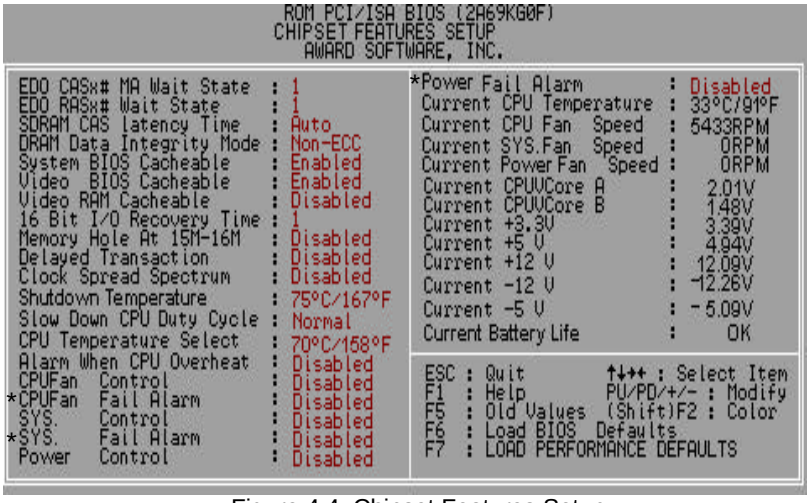


Figure 4.4: Chipset Features Setup

* These three items will show up when " CPUFan / SYS. / Power Control " is enabled.

- EDO CASx# MA Wait State

  The default value is 1

1	Set EDO CASx# MA Wait State to 1.
2	Set EDO CASx# MA Wait State to 2.

- EDO RASx# Wait State

  The default value is 1

1	Set EDO RASx# Wait State to 1.
2	Set EDO RASx# Wait State to 2.

- SDRAM CAS latency Time

  The default value is Auto

3	For 67 / 83 MHz SDRAM DIMM module.
2	For 100 MHz SDRAM DIMM module.
Auto	CAS latency time will be set automatically if you have SPD on SDRAM

- DRAM Data Integrity Mode

  The default value is Non-ECC.

Non-ECC	For 64bit standard type DIMM module.
ECC	For 72bit ECC type DIMM module.

- System BIOS Cacheable

  The default value is Enabled.

Enabled	Enable System BIOS Cacheable.
Disabled	Disable System BIOS Cacheable.

- Video BIOS Cacheable

  The default value is Enabled.

Enabled	Enable video BIOS Cacheable.
Disabled	Disable video BIOS Cacheable.

- Video RAM Cacheable

  The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable this function to get better VGA performance; while some brands of VGA must be disabled this function (e.g.ET4000W32P).

- 16 Bit I/O Recovery Time

  The default value is 1.

1-4	Set 16 Bit I/O recovery time from 1 to 4.
NA	None.

- Memory Hole At 15M-16M

  The default value is Disabled.

Disabled	Normal Setting.
Enabled	Set Address=15~16MB remap to ISA BUS.

- Delayed Transaction

  The default value is Disabled.

Disabled	Normal operation.
Enabled	For slow speed ISA device in system.

- Clock Spread Spectrum

  The default value is Disabled.

Disabled	Disabled this function.
Enabled	Enabled Spread Spectrum function.

- Shutdown Temperature. (°C / °F) (Optional)

  (This function will be effective only for the operating systems that support ACPI Function.)

  The default value is 75°C / 167°F

Disabled	Normal Operation
60°C / 140°F	Monitor CPU Temp. at 60°C / 140°F, if Temp. > 60°C / 140°F system will automatically power off .
65°C / 149°F	Monitor CPU Temp. at 65°C / 149°F, if Temp. > 65°C / 149°F system will automatically power off .
70°C / 158°F	Monitor CPU Temp. at 70°C / 158°F, if Temp. > 70°C / 158°F system will automatically power off .
75°C / 167°F	Monitor CPU Temp. at 75°C / 167°F, if Temp. > 75°C / 167°F system will automatically power off .

- Slow Down CPU Duty Cycle

  The default value is Normal.

Normal	Normal Operation
12.5%~75.0%	Monitor CPU Temp. will cause system slow down CPU Duty Cycle to 12.5%~75.0%.

- CPU Temperature Select (Optional)

  The default value is 70°C / 158°F. (Selectable from 65°C/ 149°F to 75°C / 167°F)

65°C / 149°F	Monitor CPU Temp. at 65°C / 149°F, if Temp. > 65°C / 149°F will cause system alarming & slow down CPU speed.
70°C / 158°F	Monitor CPU Temp. at 70°C / 158°F, if Temp. > 70°C / 158°F will cause system alarming & slow down CPU speed.
75°C / 167°F	Monitor CPU Temp. at 75°C / 167°F, if Temp. > 75°C / 167°F will cause system alarming & slow down CPU speed.

- Alarm When CPU Overheat (Optional)

  The default value is Disabled.

Disabled	Disable this function.
Enabled	Alarm When CPU Overheat.

- CPUFan Control (Optional)

  The default value is Disabled.

Disabled	Disable this function.
Enabled	System will check the CPUAN status.

- CPUFan Fail Alarm (Optional)

  The default value is Disabled.

Disabled	Disable this function.
Enabled	Alarm When CPUFan Failed.

- SYS Control (Optional)

  The default value is Disabled.

Disabled	Disable this function.
Enabled	System will check the SYS. status.

- SYS Fail Alarm (Optional)

  The default value is Disabled.

Disabled	Disable this function.
Enabled	Alarm When SYS. Failed.

- Power Control (Optional)

  The default value is Disabled.

Disabled	Disable this function.
Enabled	System will check the Power status.

- Power Fail Alarm (Optional)

  The default value is Disabled.

Disabled	Disable this function.
Enabled	Alarm When Power Failed.

- Current CPU Temperature (Optional)

  Detect CPU Temperature automatically.

- Current CPU FAN Speed (Optional)

  Detect CPU Fan speed status automatically.

- Current SYS. FAN Speed (Optional)

  Detect SYS. Fan speed status automatically.

- Current Power FAN Speed (Optional)

  Detect Power Fan speed status automatically.

- Current CPUVcore A / B ,+3.3V , ±12V , ±5V (Optional)

  Detect system' s voltage status automatically.

- Current Battery Life (Optional)

  The default value depends on system monitoring Battery status.

Fail	The Battery (3V) voltage is out of SPEC.
OK	The Battery (3V) voltage is in SPEC.

4.8. POWER MANAGEMENT SETUP

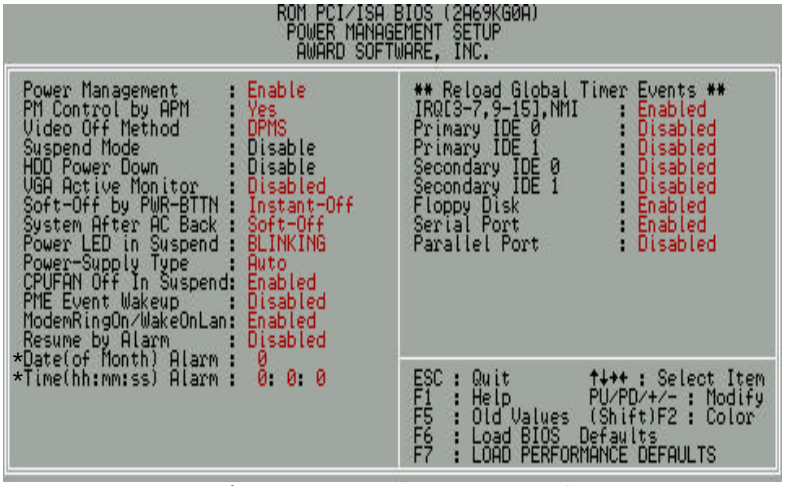


Figure 4.5: Power Management Setup

* These two items will show up when “Resume by Alarm” is enabled.

- Power Management

  The default value is Enable.

Enable	Enable Green function.
Disable	Disable Green function.

- PM Control by APM

  The default value is Yes.

Yes	Enable software APM function.
No	Disable software APM function.

- Video off Method

The default value is DPMS.

V/H SYNC + Blank	BIOS will turn off V/H-SYNC when gets into Green mode for Green monitor power saving.
Blank Screen	BIOS will only black monitor when gets into Green mode.
DPMS	BIOS will use DPMS Standard to control VGA card. (The Green type VGA card will turn of V/H-SYNC automatically.)

- Suspend Mode

The default value is Disable.

Disable	Disable Suspend Mode.
1 min - 1 Hour	Setup the timer to enter Suspend Mode.

- HDD Power Down

The default value is Disable.

Disable	Disable HDD Power Down mode function.
1-15 mins.	Enable HDD Power Down mode between 1 to 15 mins.

- VGA Active Monitor

The default value is Disabled.

Disabled	Disable monitor VGA activity.
Enabled	Enable monitor VGA activity.

- Soft-off by PWR-BTTN

The default value is Instant-Off.

Instant-off	Soft switch ON/OFF for POWER ON/OFF
Delay 4 Sec.	Soft switch ON 4sec. for POWER OFF.

- System After AC Back

The default value is Soft-Off.

Memory	This function depends on computer status
Soft-Off	Set System Soft-Off Status.
Full-On	Set System Full-On Status.

- Power LED In Suspend

The default value is BLINKING.

OFF/ DUAL	Set Power LED In Suspend to OFF/DUAL.
ON	Set Power LED In Suspend to ON.
BLINKING	Set Power LED In Suspend to BLINKING.

☞ **This function is support in PCB version 2.9 and above.**

- Power-Supply Type

The default value is Auto.

Auto	Auto-detect which type of power supply is used.
P8&P9	Power-Supply Type is P8&P9.
ATX	Power-Supply Type is ATX.

- CPUFAN Off In Suspend

The default value is Enabled.

Disabled	Disable this function.
Enabled	Stop CPU FAN when entering Suspend mode.

- PME Event Wakeup

The default value is Disabled.

Disabled	Disable PME Event Wakeup.
Enabled	Enable PME Event Wakeup.

- ModemRingOn / WakeOnLan

The default value is Enabled.

Disabled	Disable these functions.
Enabled	Enable these functions.

- Resume by Alarm

The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable alarm function to POWER ON system.

If the default value is Enabled.

Date (of Month) Alarm :	0~31
Time (hh: mm: ss) Alarm :	(0~23) : (0~59) : (0~59)

- IRQ [3-7,9-15] , NMI

The default value is Enabled.

Disabled	Disable this function.
Enabled	Enable monitor IRQ [3-7,9-15] for Green event.

- Primary IDE 0/1

The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable monitor Primary IDE 0/1 for Green event.

- Secondary IDE 0/1

The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable monitor Secondary IDE 0/1 for Green event.

- Floppy Disk

The default value is Enabled.

Disabled	Disable this function.
Enabled	Enable monitor Floppy Disk for Green event.

- Serial Port

The default value is Enabled.

Disabled	Disable this function.
Enabled	Enable monitor Serial Port for Green event.

- Parallel Port

The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable monitor Parallel Port for Green event.

4.9. PNP/PCI CONFIGURATION

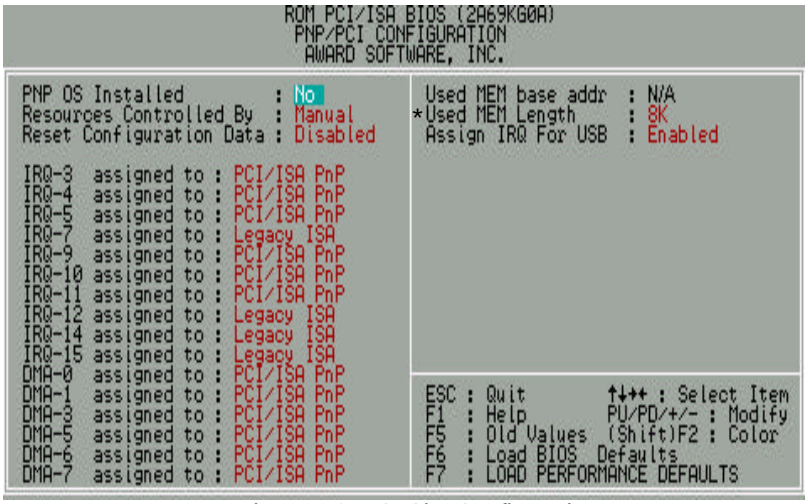


Figure 4.6: PCI Slot Configuration

* This item will show up when “Used MEM base addr” has been set.

- PNP OS Installed

The default value is No.

Yes	Enable PNP OS Installed function.
No	Disable PNP OS Installed function.

- Resources Controlled by

The default value is Manual.

Manual	User can set the PnP resource (I/O Address, IRQ & DMA channels) used by legacy ISA DEVICE.
Auto	BIOS automatically use these PnP rescuers.

- Reset Configuration Data

The default value is Disabled.

Disabled	Disable this function.
Enabled	Enable clear PnP information in ESCD.

- IRQ (7,12,14,15) & IRQ (3,4,5,9,10,11,DMA(0,1,3,5,6,7) assigned to

The default value is "Legacy ISA" or "PCI/ISA PnP".

Legacy ISA	The resource is used by Legacy ISA device.
PCI/ISA PnP	The resource is used by PCI/ISA PnP device (PCI or ISA).

- Used MEM base addr

The default value is N/A.

N/A	Disable the MEM. block using.
C800 ~ DC00	Select the MEM. block starting address.

- Used MEM Length

The default value is 8K.

8K ~ 64K	Select the MEM. block size.

- Assign IRQ For USB

The default value is Enabled.

Enabled	Assign a specific IRQ for USB
Disabled	No IRQ is assigned for USB

4.10. LOAD BIOS DEFAULTS

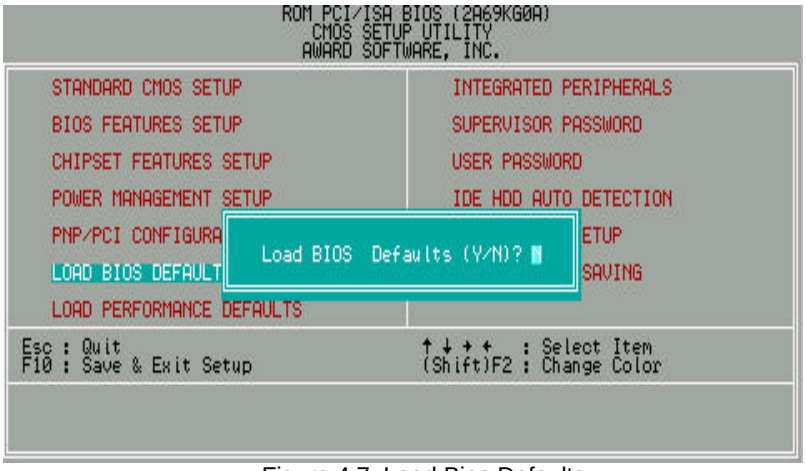


Figure 4.7: Load Bios Defaults

- Load BIOS Defaults

  To load BIOS defaults value to CMOS SRAM, enter "Y". If not, enter "N".

4.11. LOAD PERFORMANCE DEFAULTS

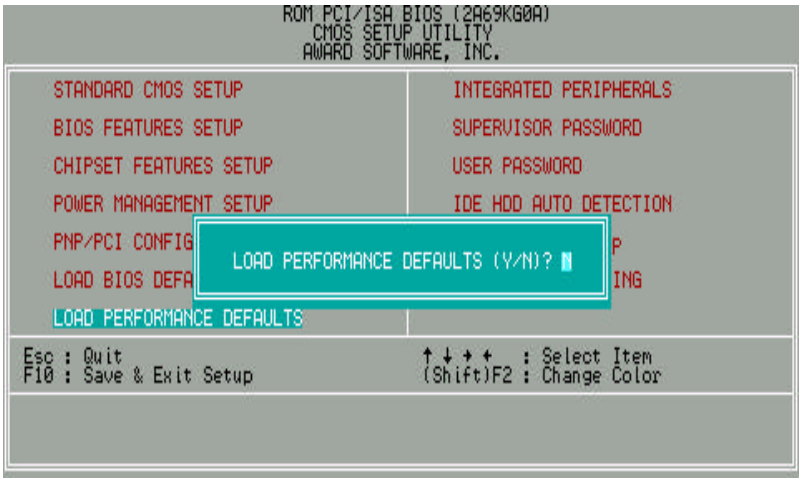


Figure 4.8: Load Performance Defaults

- Load PERFORMANCE Defaults

  To load PERFORMANCE defaults value to CMOS SRAM, enter "Y". If not, enter "N".

4.12. INTEGRATED PERIPHERALS

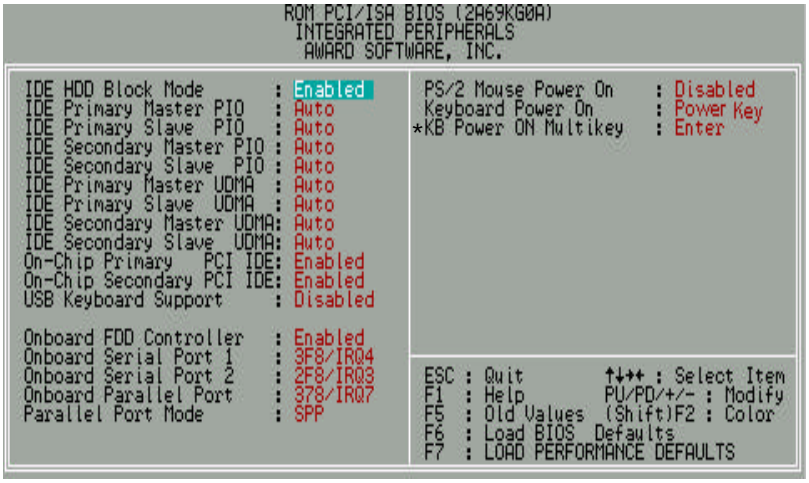


Figure 4.9: Integrated Peripherals

* This item will show up when “Keyboard Power On: Multikey” is selected.

- IDE HDD Block Mode

  The default value is Enabled.

Enabled	Enable IDE HDD Block Mode
Disabled	Disable IDE HDD Block Mode

- IDE Primary Master PIO (for onboard IDE 1st channel).

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Primary Slave PIO (for onboard IDE 1st channel).

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Secondary Master PIO (for onboard IDE 2nd channel).

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Secondary Slave PIO (for onboard IDE 2nd channel).

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Mode0~4	Manually set the IDE Accessing mode.

- IDE Primary Master UDMA.

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disable UDMA function.

- IDE Primary Slave UDMA.

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disable UDMA function.

- IDE Secondary Master UDMA.

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disable UDMA function.

- IDE Secondary Slave UDMA.

  The default value is Auto.

Auto	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disable UDMA function.

- On-Chip Primary PCI IDE

  The default value is Enabled.

Enabled	Enable onboard 1st channel IDE port.
Disabled	Disable onboard 1st channel IDE port.

- On-Chip Secondary PCI IDE

  The default value is Enabled.

Enabled	Enable onboard 2nd channel IDE port.
Disabled	Disable onboard 2nd channel IDE port.

- USB Keyboard Support

  The default value is Disabled.

Enabled	Enable USB Keyboard Support.
Disabled	Disable USB Keyboard Support.

- Onboard FDD Controller

  The default value is Enabled.

Enabled	Enable onboard FDD port.
Disabled	Disable onboard FDD port.

- Onboard Serial Port 1

The default value is 3F8/IRQ4.

Auto	BIOS will automatically setup the port 1 address.
3F8/IRQ4	Enable onboard Serial port 1 and address is 3F8.
2F8/IRQ3	Enable onboard Serial port 1 and address is 2F8.
3E8/IRQ4	Enable onboard Serial port 1 and address is 3E8.
2E8/IRQ3	Enable onboard Serial port 1 and address is 2E8.
Disabled	Disable onboard Serial port 1.

- Onboard Serial Port 2

The default value is 2F8/IRQ3.

Auto	BIOS will automatically setup the port 2 address.
3F8/IRQ4	Enable onboard Serial port 2 and address is 3F8.
2F8/IRQ3	Enable onboard Serial port 2 and address is 2F8.
3E8/IRQ4	Enable onboard Serial port 2 and address is 3E8.
2E8/IRQ3	Enable onboard Serial port 2 and address is 2E8.
Disabled	Disable onboard Serial port 2.

- Onboard Parallel port

The default value is 378/IRQ7.

378/IRQ7	Enable onboard LPT port and address is 378/IRQ7.
278/IRQ5	Enable onboard LPT port and address is 278/IRQ5.
Disabled	Disable onboard LPT port.
3BC/IRQ7	Enable onboard LPT port and address is 3BC/IRQ7.

- Parallel Port Mode

The default value is SPP.

SPP	Using Parallel port as Standard Printer Port.
EPP	Using Parallel port as Enhanced Parallel Port.
ECP	Using Parallel port as Extended Capabilities Port.
ECP/EPP	Using Parallel port as ECP & EPP mode.

- PS/2 Mouse Power on

The default value is Disabled.

Disabled	Disable PS/2 Mouse Power on .
Left Double	Click twice on PS/2 mouse left button to Power on system.
Right Double	Click twice on PS/2 mouse right button to Power on system.

- Keyboard Power on

The default value is POWER Key.

Disabled	Disable Keyboard Power on .
Multikey	Enter multikey combination to Power on system.
POWER Key	If you keyboard have "POWER Key " button, you can press the key to power on your system .

- KB Power ON Multikey

Enter	Enter from 1 to 5 characters to set the Keyboard Power On Password.

You can power on your system by entering password from the Keyboard after setting the "Keyboard power on" jumper (JP1) and Password in CMOS Setup.

4.13. SUPERVISOR / USER PASSWORD

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

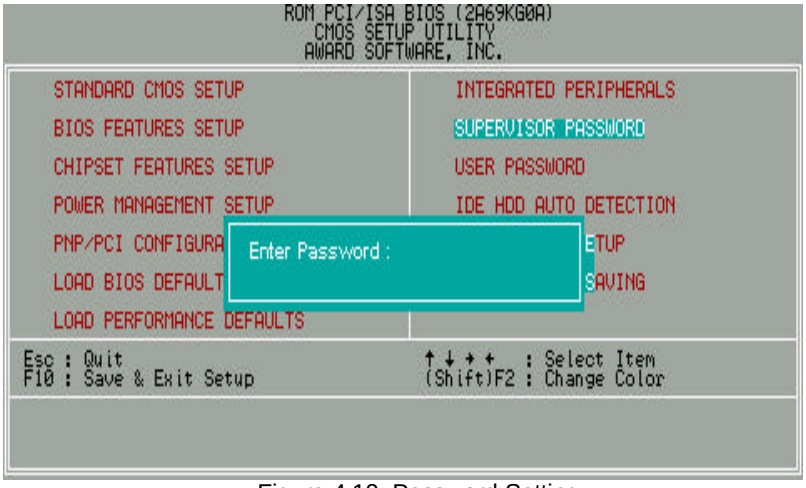


Figure 4.10: Password Setting

Type the password, up to eight characters, and press <Enter>. The password typed now will clear the previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>.

To disable password, just press <Enter> when you are prompted to enter password. A message “PASSWORD DISABLED” will appear to confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

If you select System at Security Option in BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu. If you select Setup at Security Option in BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

4.14. IDE HDD AUTO DETECTION

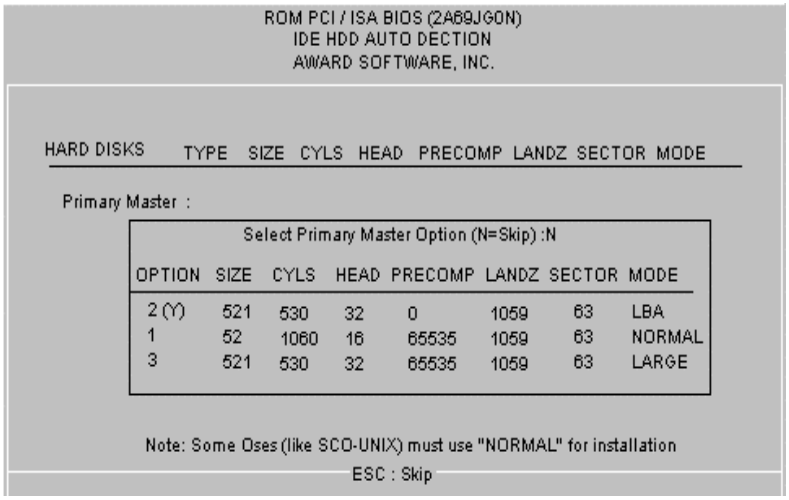


Figure 4.11: IDE HDD Auto Detection

Type "Y" will accept the H.D.D. parameter reported by BIOS.

Type "N" will keep the old H.D.D. parameter setup. If the hard disk cylinder number is over 1024, then the user can select LBA mode or LARGER mode for DOS partition larger than 528 MB.

4.15. SAVE & EXIT SETUP

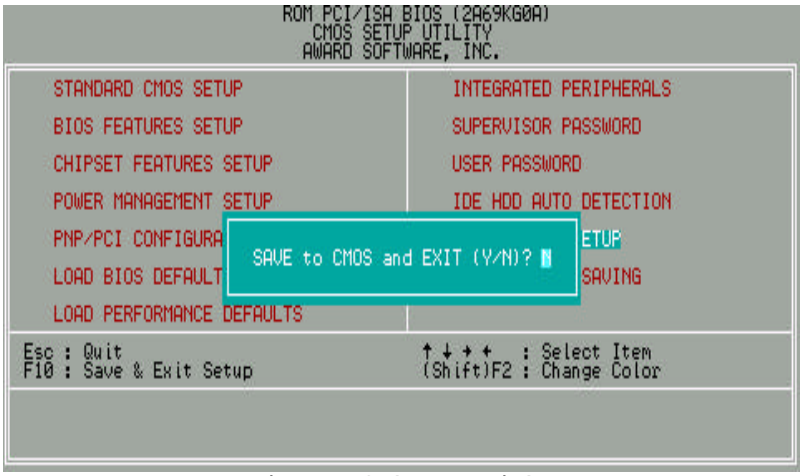


Figure 4.12: Save & Exit Setup

Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS SRAM.

Type "N" will return to Setup Utility.

4.16. EXIT WITHOUT SAVING

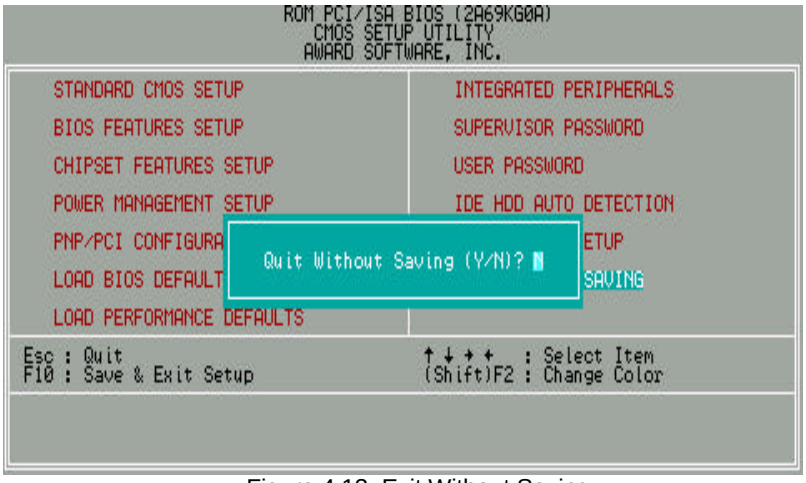


Figure 4.13: Exit Without Saving

Type "Y" will quit the Setup Utility without saving to RTC CMOS SRAM.

Type "N" will return to Setup Utility.

DECLARATION OF CONFORMITY
Per FCC Part 2 Section 2. 1077(a)

Responsible Party Name: G.B.T. INC.

Address: 18305 Valley Blvd., Suite#A
LA Puent, CA 91744

Phone/Fax No: (818) 854-9338/ (818) 854-9339

hereby declares that the product

Product Name: Mother Board

Model Number: GA-6BA

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109(a), Class B Digital Device

Supplementary Information:

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

Representative Person's Name: ERIC LU

Signature: Eric Lu

Date: May. 27, 1998

FCC Compliance Statement:

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

-Reorient or relocate the receiving antenna

-Move the equipment away from the receiver

-Plug the equipment into an outlet on a circuit different from that to which the receiver is connected

-Consult the dealer or an experienced radio/television technician for additional suggestions

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void Your authority to operate such equipment.

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

We, Manufacturer/Importer
(full address)

G.B.T. Technology Träding GMbH
Ausschlager Weg 41, 1F, 20537 Hamburg, Germany

declare that the product
(description of the apparatus, system, installation to which it refers)

Mother Board
GA-6BA

is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 89/336 EEC-EMC Directive

☐ **EN 55011**	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM high frequency equipment	☐ **EN 61000-3-2***	Disturbances in supply systems caused by household appliances and similar electrical equipment "Harmonics"
		☒ **EN60555-2**	
☐ **EN55013**	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☐ **EN61000-3-3*** ☒ **EN60555-3**	Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
☐ **EN 55014**	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☒ **EN 50081-1**	Generic emission standard Part 1: Residual, commercial and light industry
		☒ **EN 50082-1**	Generic immunity standard Part 1: Residual, commercial and light industry
☐ **EN 55015**	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ **EN 55081-2**	Generic emission standard Part 2: Industrial environment
☐ **EN 55020**	Immunity from radio interference of broadcast receivers and associated equipment	☐ **EN 55082-2**	Generic immunity standard Part 2: Industrial environment
☒ **EN 55022**	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	☐ **ENV 55104**	Immunity requirements for household appliances tools and similar apparatus
☐ **DIN VDE 0855** ☐ **part 10** ☐ **part 12**	Cabled distribution systems; Equipment for receiving and/or **distribution** from sound and television signals	☐ **EN 50091- 2**	EMC requirements for uninterruptible power systems (UPS)
☒ **CE marking**		CE (EC conformity marking)	

The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 73/23 EEC

☐ **EN 60065**	Safety requirements for mains operated electronic and related apparatus for household and similar general use	☐ **EN 60950**	Safety for information technology equipment including electrical business equipment
☐ **EN 60335**	Safety of household and similar electrical appliances	☐ **EN 50091-1**	General and Safety requirements for uninterruptible power systems (UPS)

Manufacturer/Importer

(Stamp)

Date : May. 27, 1998

Signature : Rex Lin

Name : Rex Lin