

6GXU

USER'S MANUAL

1. **Support Dual BIOS.**
2. **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.
3. **System power on by Keyboard:** If your ATX power supply supports larger than 300 mA 5V Stand-By current (dependent on the specification of keyboards), you can power on your system by entering password from the Keyboard after setting the "Keyboard power on" jumper and password in CMOS Setup.
4. **Modem Ring-On on COM A, COM B.**
5. **Wake-up on LAN supports** (Your ATX power supply must support larger than 720 mA 5V Stand-By current).
6. **Support LDCM^â**
7. **CPU Over Voltage Protection.**

Pentium^â II / III XEON SLOT2 Processor MAINBOARD

R-14-01-090414

REV 1.4 First Edition

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Apr 14, 1998 Taipei, Taiwan

I. Quick Installation Guide :

CPU SPEED SETUP

The system bus speed is set to 100MHz. The user can select the system bus speed and change the DIP SWITCH (**SW1**) selection to set up the CPU speed for 400 - 650MHz processor.

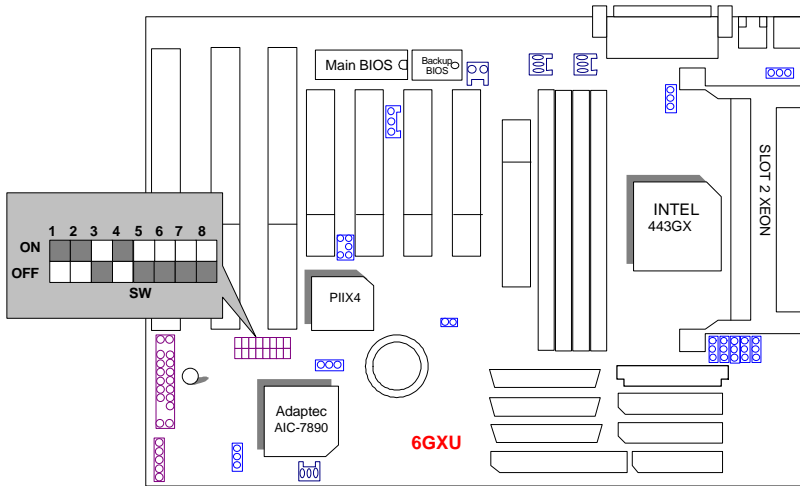
⚠ **The CPU speed must match with the frequency RATIO. It will cause system hanging up if the frequency RATIO is higher than CPU's.**

SW1: (ON: ○ / OFF: ×)

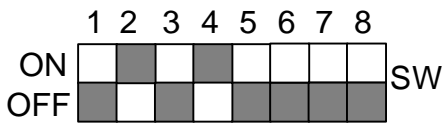
Ratio	1	2	3	4	Clk	5	6	7	8	PCI Clk
X4	○	○	×	○	100	×	×	×	×	33
X4.5	×	○	×	○	112	×	×	○	×	37.5
X5	○	×	×	○	124	×	○	○	×	41.3
X5.5	×	×	×	○	133	×	○	×	×	44.3
X6	○	○	○	×	133	○	○	○	×	33
X6.5	×	○	○	×						

★ **Note: We don't recommend you to setup your system speed to 112, 124 or 133MHz because these frequencies are not the standard specifications for CPU, Chipset and most of the peripherals. Whether your system can run under 112, 124 or 133MHz properly will depend on your hardware configurations: CPU, SDRAM, Cards, etc.**

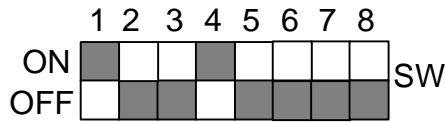
1. Pentium® II XEON SLOT2 400 / 100MHz FSB



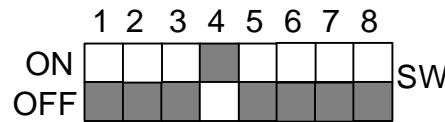
2. Pentium® II XEON SLOT2 450 / 100MHz FSB



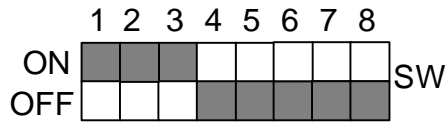
3. Pentium® III XEON SLOT2 500 / 100MHz FSB



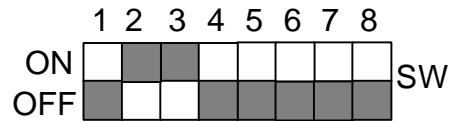
4. Pentium® III XEON SLOT2 550 / 100MHz FSB



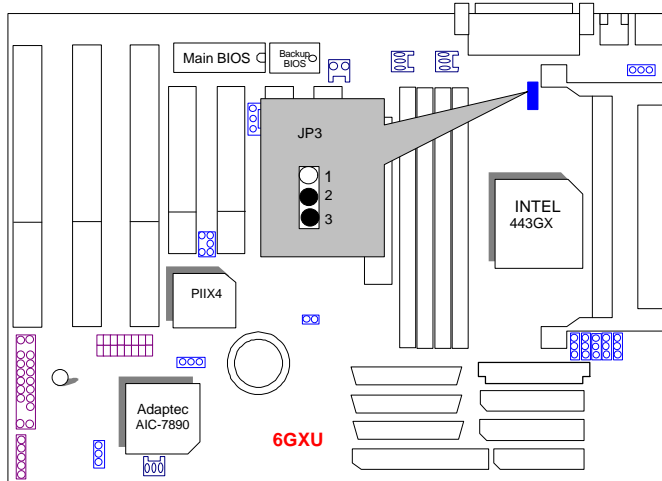
5. Pentium® III XEON SLOT2 600 / 100MHz FSB



6. Pentium® III XEON SLOT2 650 / 100MHz FSB



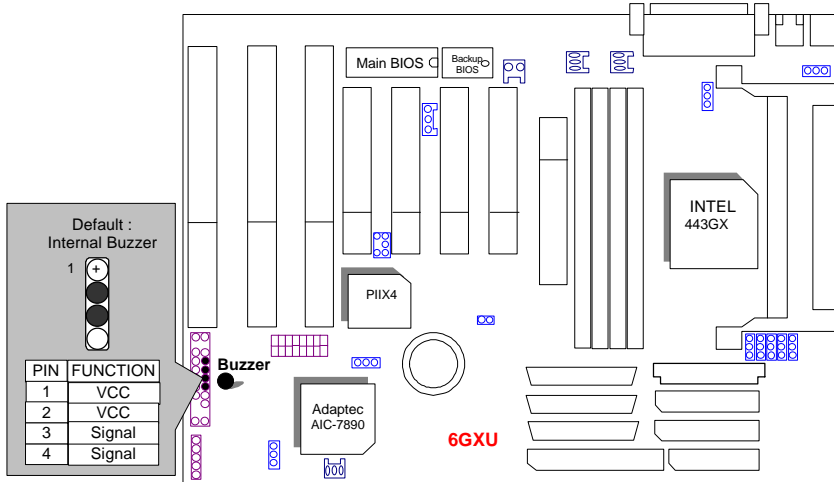
☛ For 133MHz Jumper Setting:



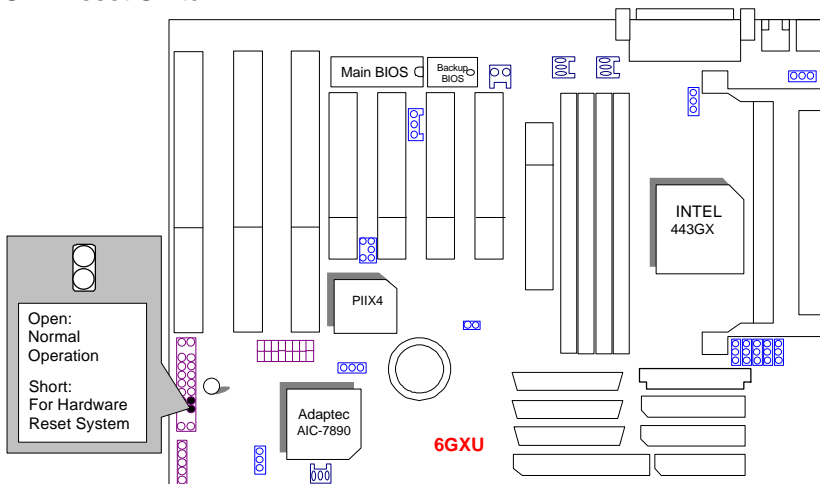
★ Note: We don't recommend you to setup your system speed to 133MHz because this frequencies is not the standard specifications for CPU, Chipset and most of the peripherals. Whether your system can run under 133MHz properly will depend on your hardware configurations: CPU, SDRAM, Cards, etc.

II. Jumper setting :

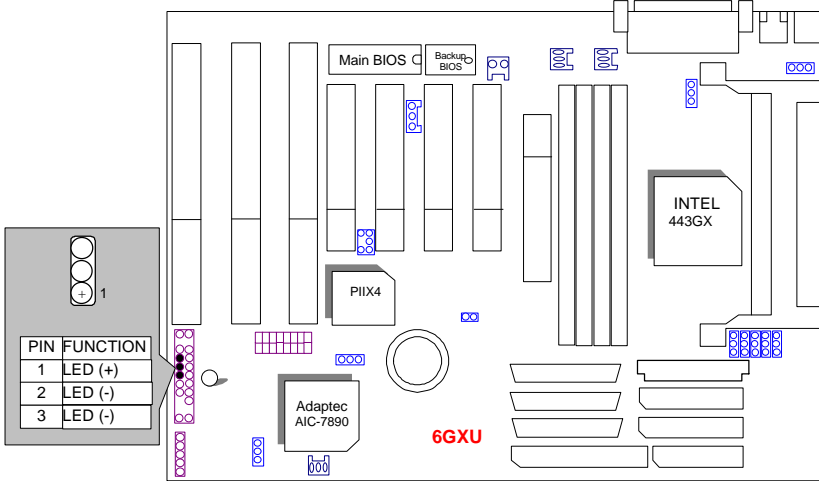
SPKR : Speaker Connector



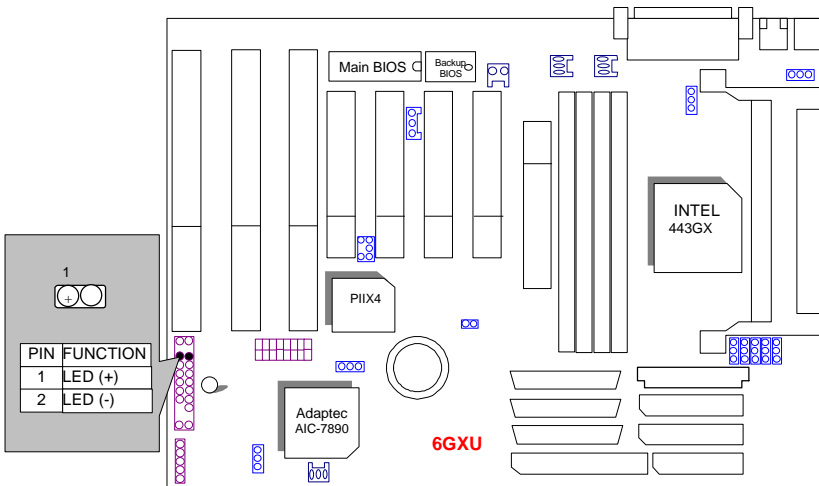
RST : Reset Switch



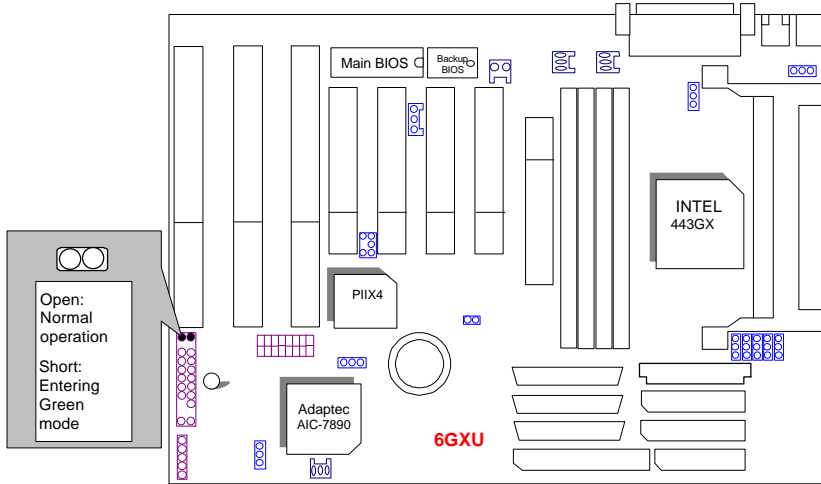
PWR : Power LED Connector (as 3 steps ACPI LED)



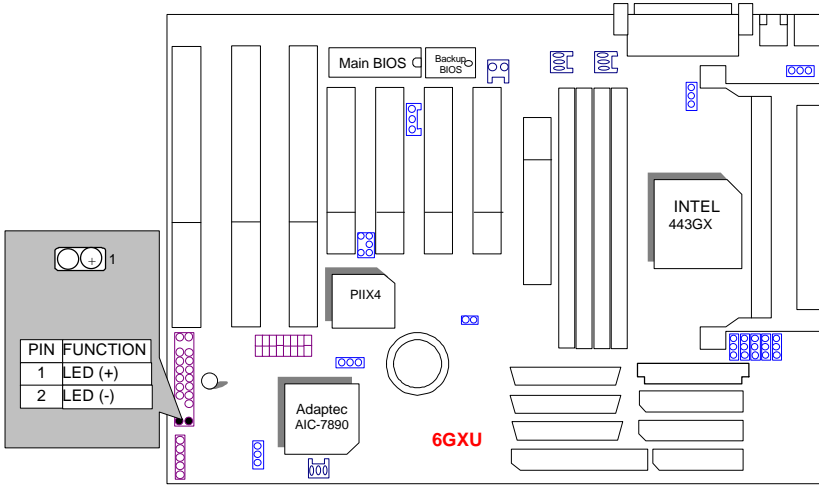
HD : IDE Hard Disk Active LED



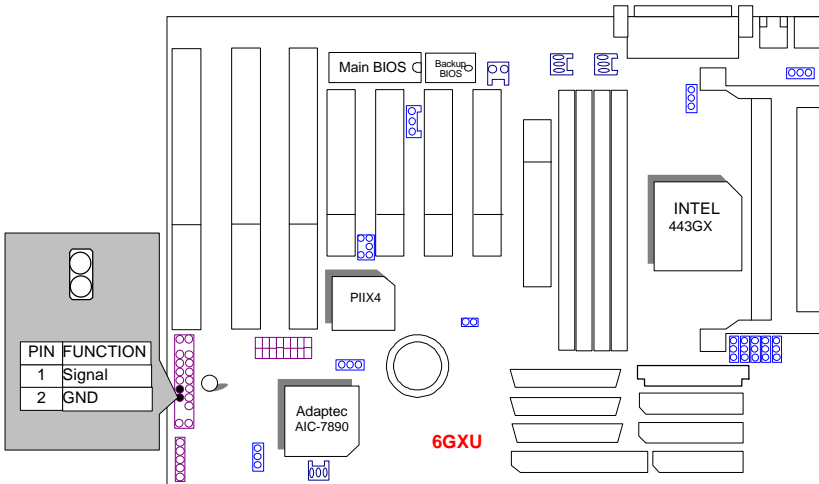
GN : Green Function Switch



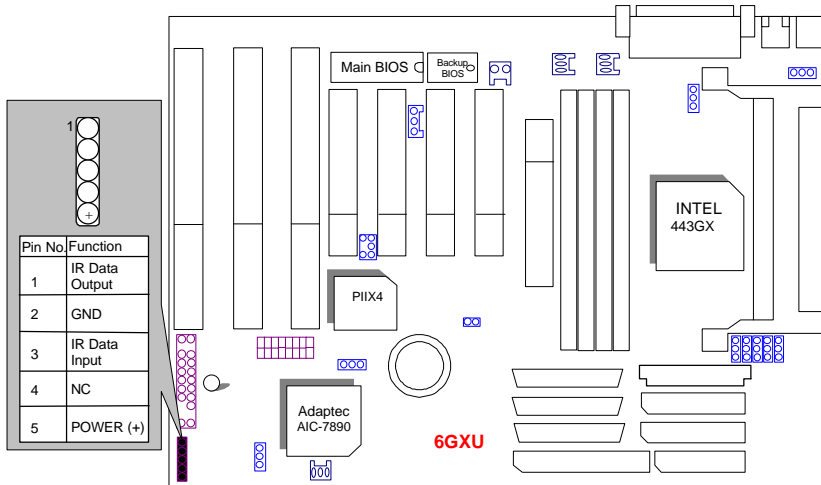
GD : Green LED Connector



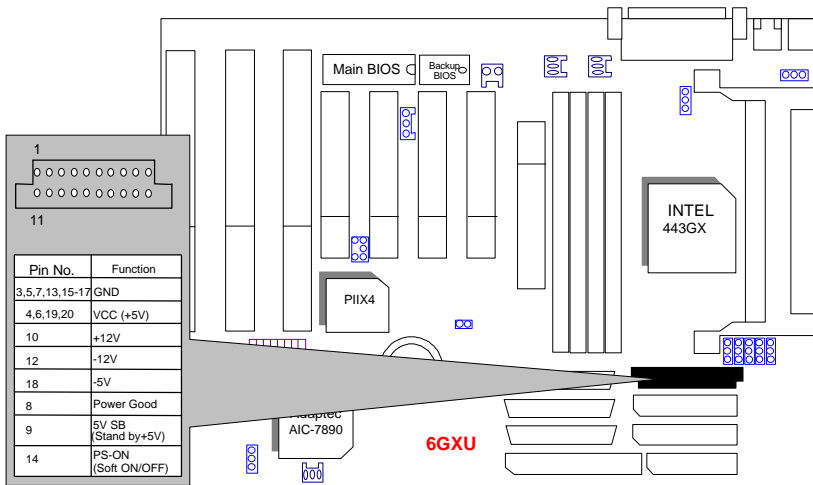
SOFT PWR : Soft Power Connector



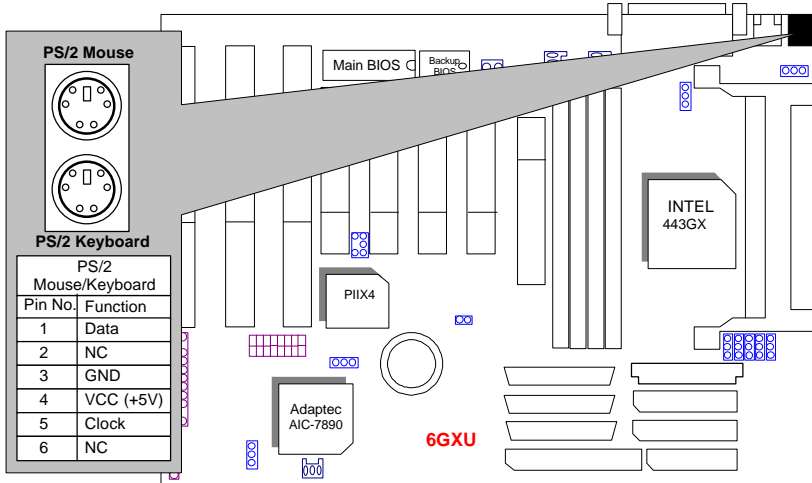
IR : Infrared Connector (Optional)



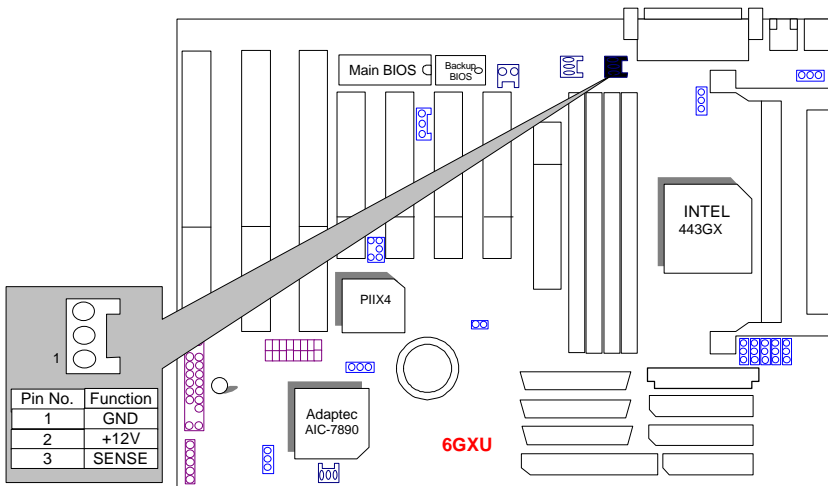
ATX POWER : ATX Power Connector



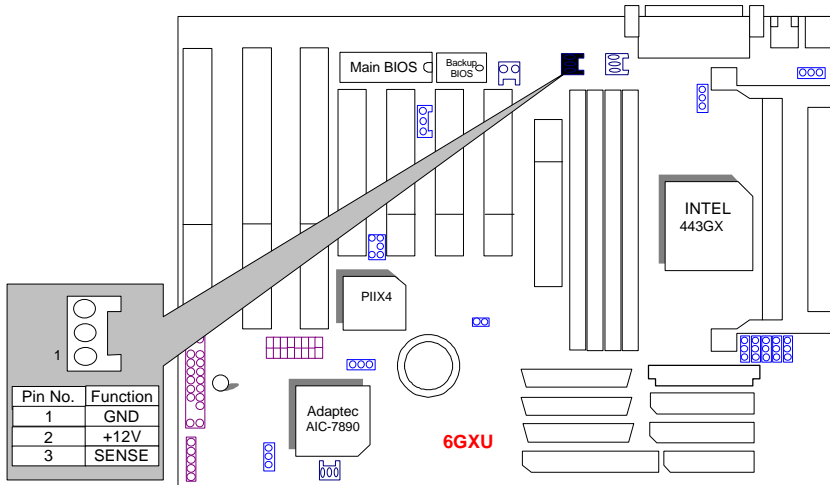
PS/2 Mouse / Keyboard Connector



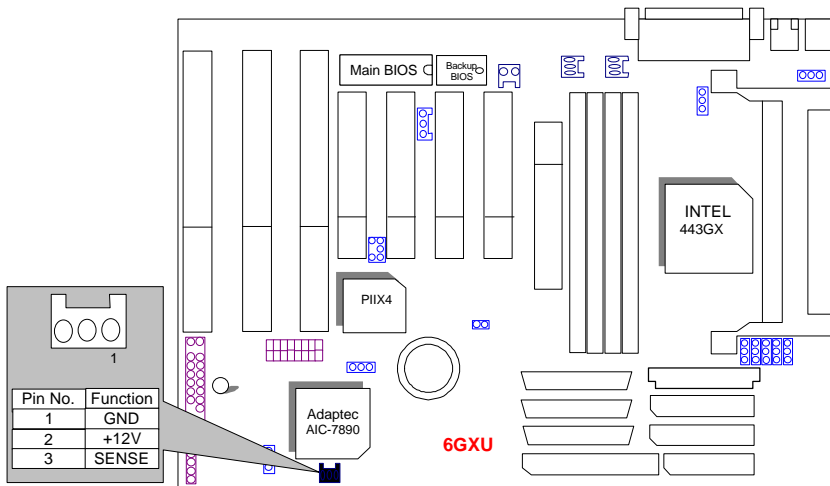
CPU FAN : CPU Cooling Fan Power Connector



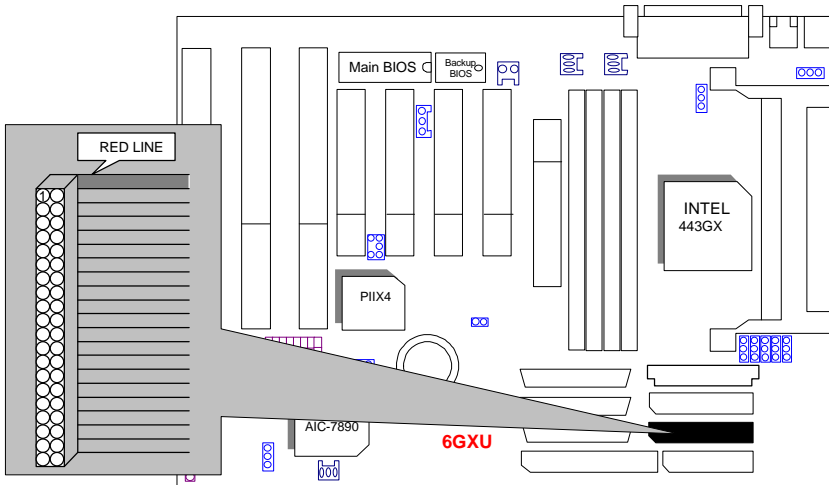
Power FAN : Power Fan Power Connector



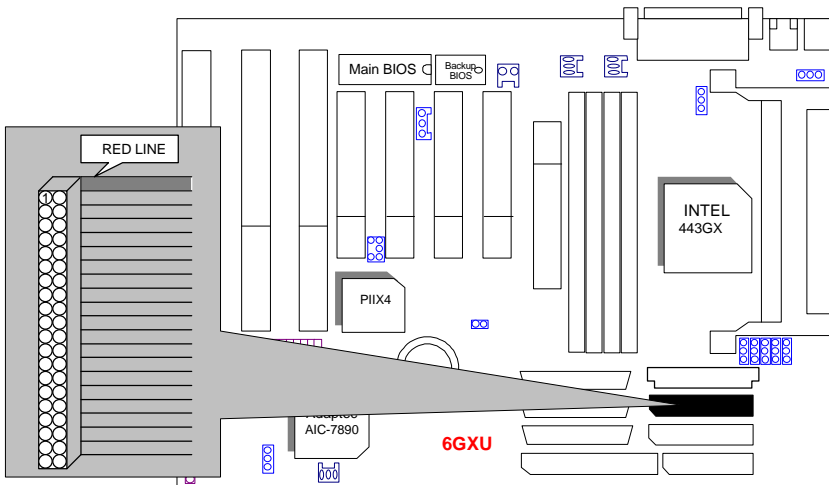
System FAN : System FAN Power Connector



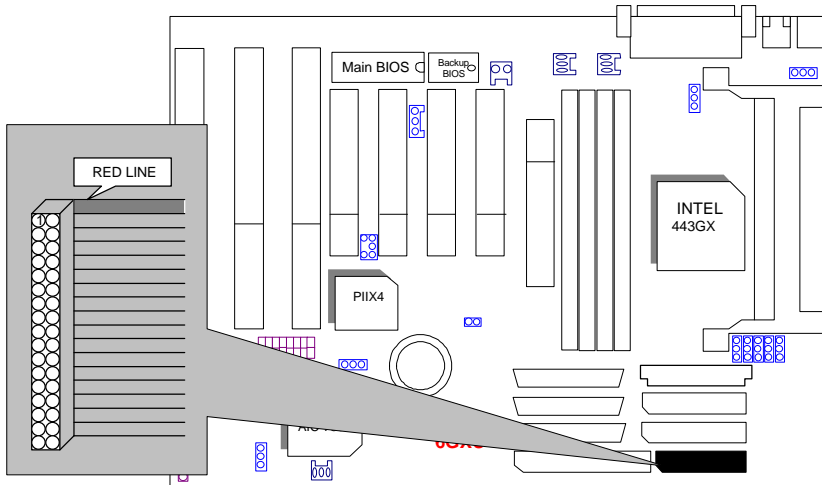
IDE1: For Primary IDE port



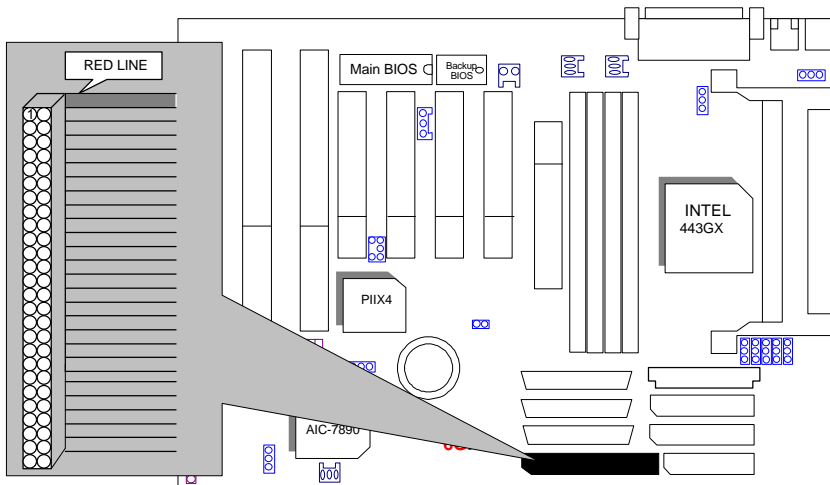
IDE2: For Secondary IDE port



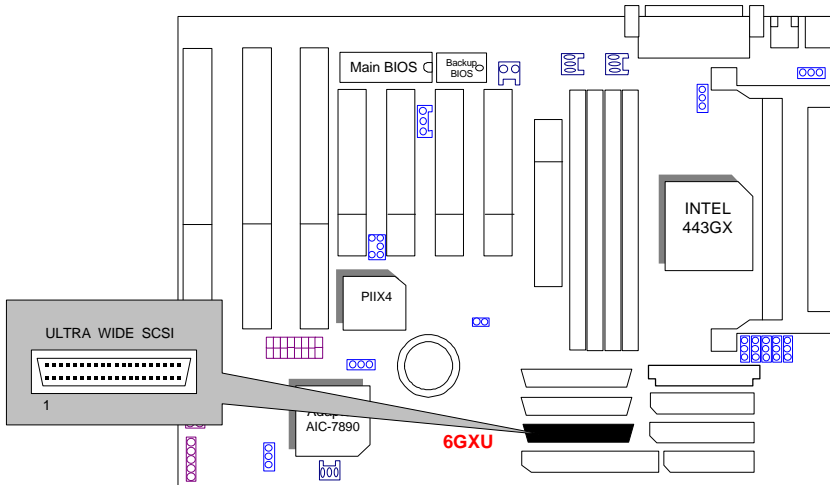
FLOPPY : FLOPPY PORT



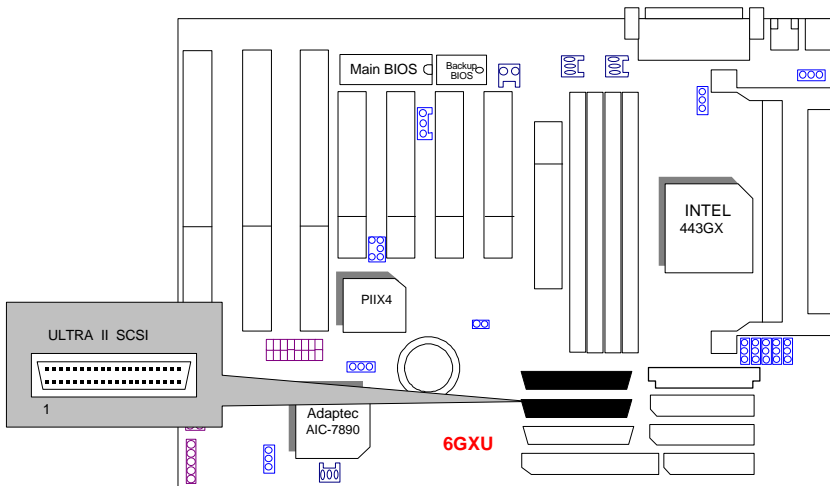
ULTRA SCSI : ON BOARD ULTRA SCSI PORT



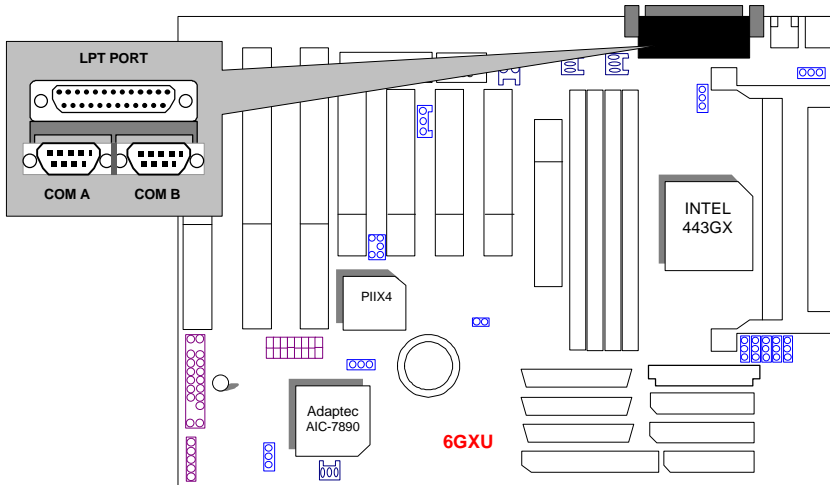
ULTRA WIDE SCSI : ON BOARD ULTRA WIDE SCSI PORT



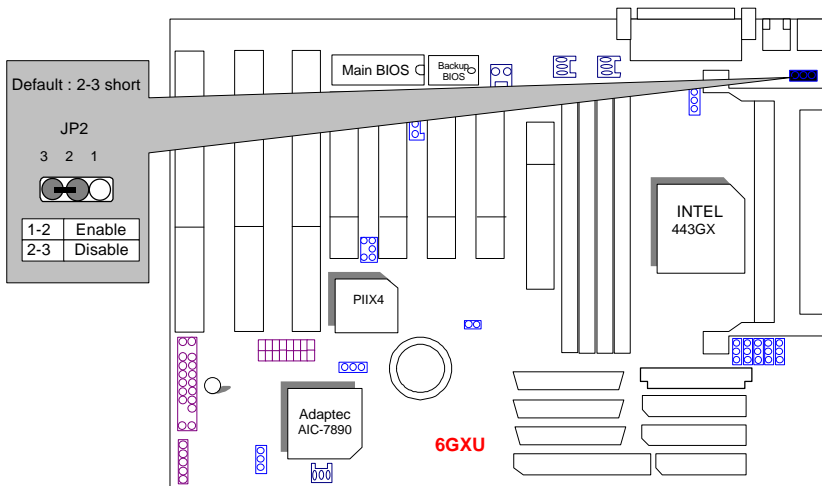
ULTRA II SCSI : ON BOARD ULTRA II SCSI PORT



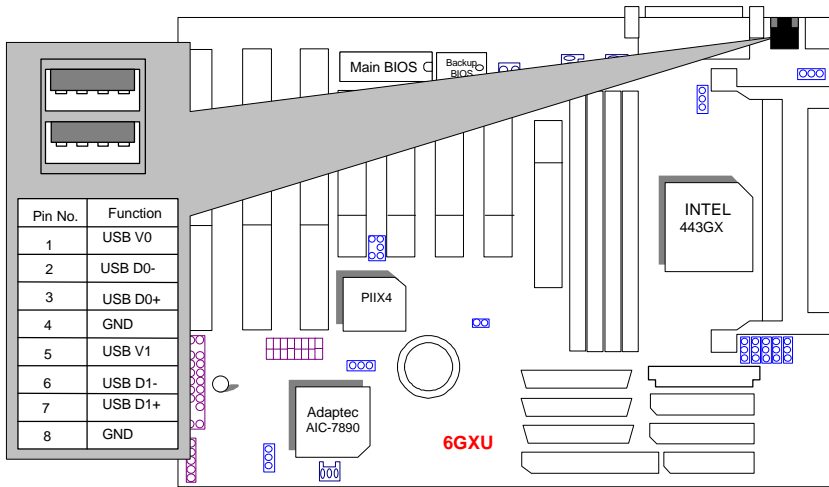
LPT PORT / COM A / COM B



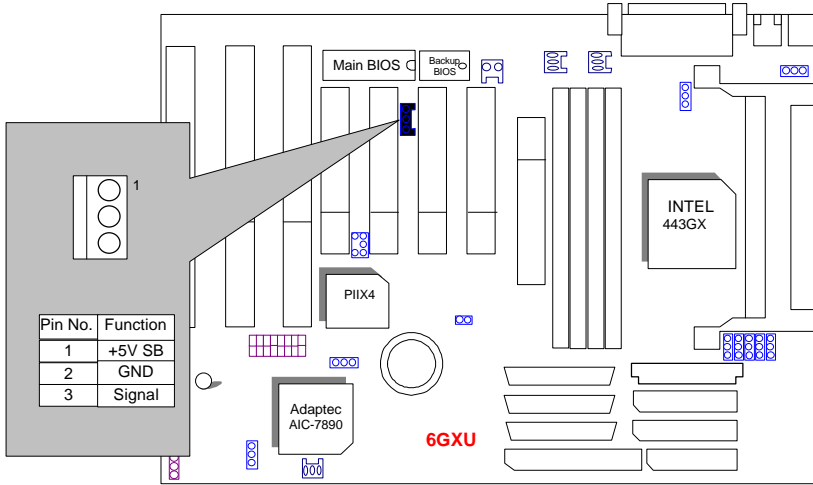
JP2: Keyboard Power On



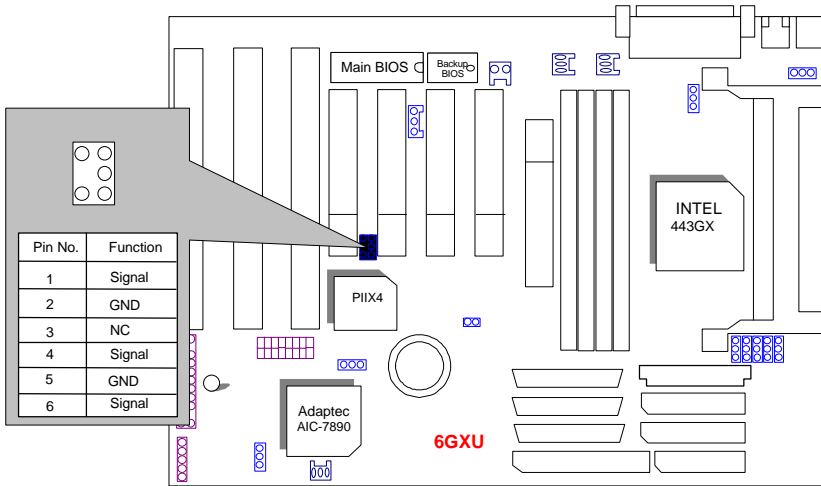
USB : USB Port



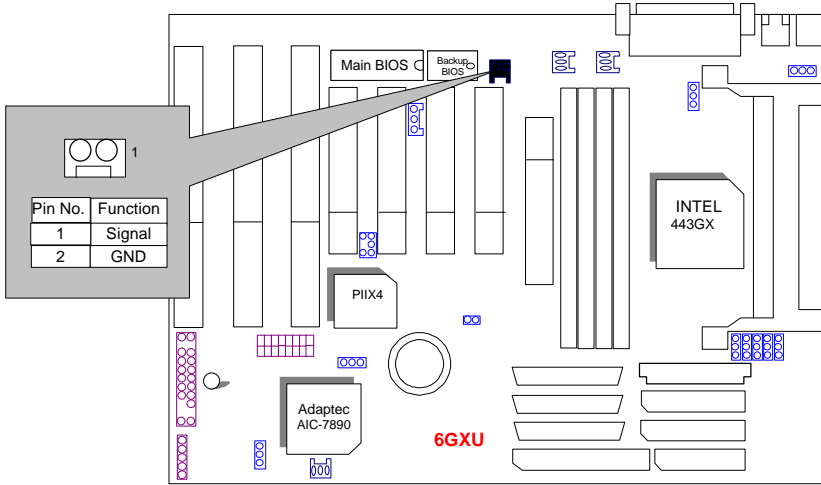
JP4 : Wake on LAN



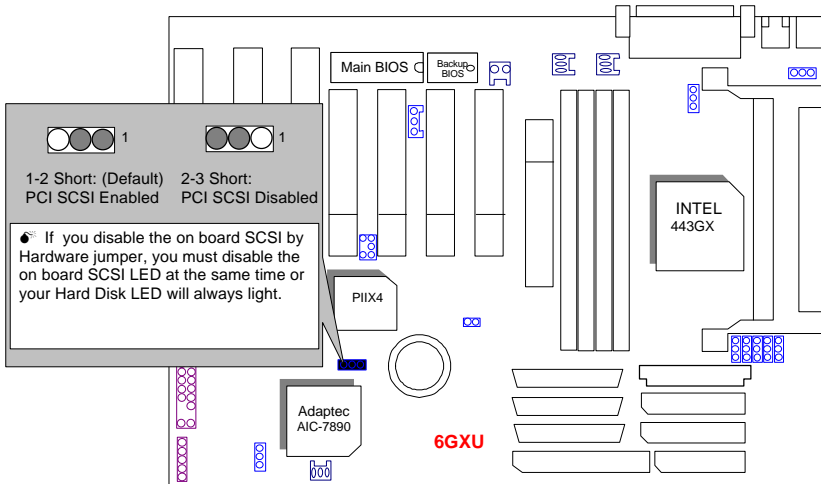
SB-LINK : For PCI Audio / Sound Card use only



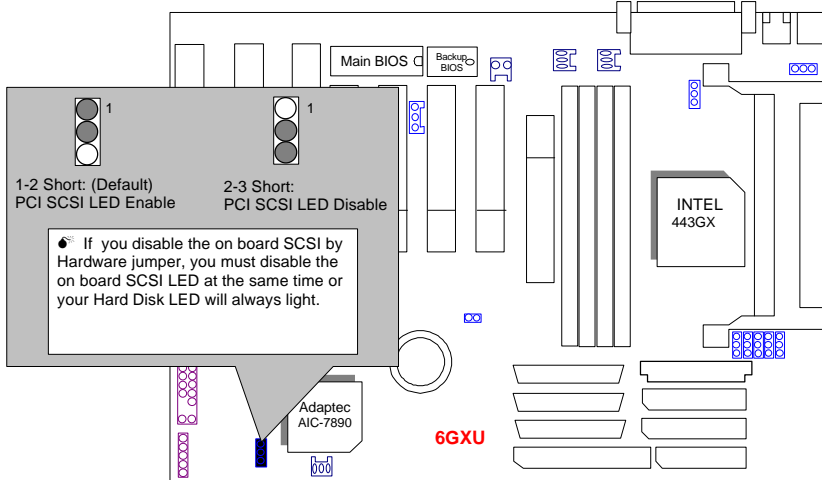
RING PWR ON : Internal Modem Ring Power On Function



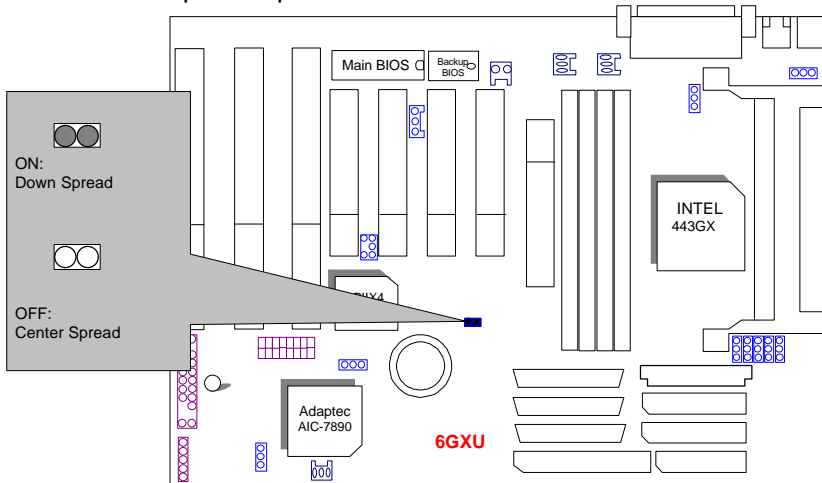
JP10 : Onboard PCI SCSI Function



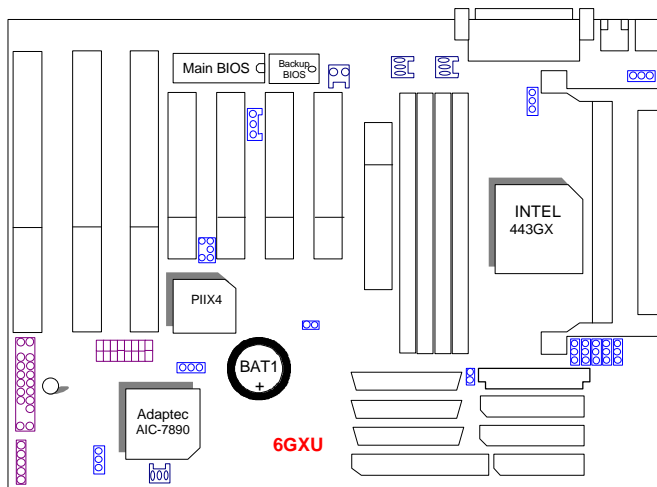
JP17 : Onboard PCI SCSI LED



JP6: Onboard Spread Spectrum Select



BAT1:For Battery



- 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.

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.

```

ROM PCI/ISA BIOS (2A69KG0C)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

* Current Temp.(°C/°F)
CPU: System:
CPU Warning Temperature : 70°C/158°F
Shutdown Temperature : 75°C/167°F
Slow Down CPU Duty Cycle : Normal
Reset Case Open Status : No
Case Opened : No
* Fan Failure Alarm
CPU:No Power:No System:No
* Current Fan Speed (RPM)
CPU:5443 Power:0 System:0
* Current Voltage (V)
VCORE:1.95 VGTL:1.52 UCC3:3.56
+5V:5.08 +12V:12.52 -12V:-11.86
-5V:-5.09 VBAT:3.26 5USB:5.05

SDRAM CAS latency Time : 2
DRAM Data Integrity Mode : Non-ECC
System BIOS Cacheable : Enabled
Video BIOS Cacheable : Enabled
Video RAM Cacheable : Disabled
16 Bit I/O Recovery Time : 1
Memory Hole At 15M-16M : Disabled
Delayed Transaction : Disabled
Clock Spread Spectrum : Disabled
Auto Detect DIMM Clk : Enabled

ESC : Quit          ↑↓↓ : Select Item
F1  : Help          PU/PD/+/- : Modify
F5  : Old Values   (Shift)F2 : Color
F6  : Load BIOS Defaults
F7  : LOAD PERFORMANCE DEFAULTS

```

** Each value of items as above depends on your hardware configuration : CPU , SDRAM , Cards , etc.

Please modify each value of items If your system does not work properly .

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 XEON SLOT2 450MHz
- DRAM (128x2)MB SDRAM (MITSUBISHI M5M4V64S30ATP-8)
- CACHE SIZE 2MB included in CPU
- DISPLAY GA-630 AGP Display Card (16MB SGRAM)
- STORAGE Onboard Ultra-II SCSI (Seagate ST39102LW)
- O.S. Windows NT™4.0
- DRIVER Display Driver at 1024 x 768 x 64 colors x 75Hz.

Adaptec PCI Ultra II SCSI Driver

Processor	Intel Pentium® II XEON SLOT2 450MHz (100*4.5)
Winbench99	
CPU mark32	1270
FPU Winmark	2350
Business Disk	5730
Hi-End Disk	11100
Business Graphics	234
Hi-End Graphics	400
Winstone99	
Business	35.2
Hi-End	31.8

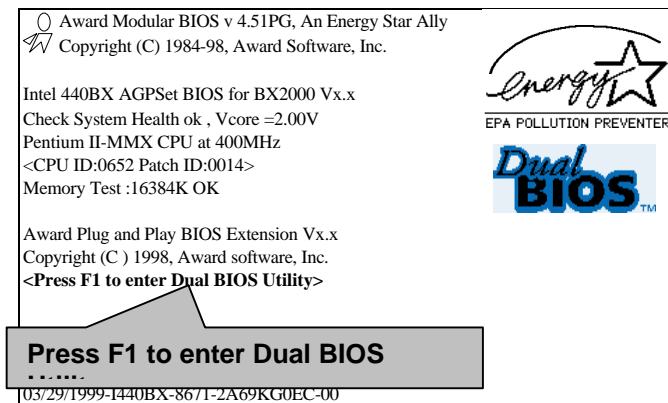
V. Introduce Dual BIOS

A. What is Dual BIOS Technology?

Dual BIOS means that there are two system BIOS (ROM) on the motherboard, one is the Main BIOS and the other is Backup BIOS. Under the normal circumstances, the system works on the Main BIOS. If the Main BIOS is corrupted or damaged, the Backup BIOS can take over while the system is powered on. This means that your PC will still be able to run stably as if nothing has happened in your BIOS.

B. How to use Dual BIOS?

a. Boot Screen



b. Dual BIOS Utility

Dual BIOS Utility V6.60.g.01K (C) 1999, Gigabyte Technology Co., LTD.	
Wide Range Protection	:Disabled
Halt On BIOS Defects	:Disabled
Auto Recovery	:Enabled
Boot From	:Main BIOS
BIOS Recovery	:Main to Backup
F3: Load Default	F5:Start BIOS Recovery
F7: Save And Restart	F9:Exit Without Saving
Use <Space> key to toggle setup	

c. Dual BIOS Item explanation:

Wide Range Protection: Disabled(Default), Enabled*Status 1:*

If any failure (ex. Update ESCD failure, checksum error or reset.) occurs in the Main BIOS , just before the Operating System is loaded and after the power is on, and that the Wide Range Protection is set to "Enable", the PC will boot from Backup BIOS automatically.

Status 2:

If the ROM BIOS on peripherals cards(ex. SCSI Cards, LAN Cards,..) emits signals to request restart of the system after the user make any alteration on it, the boot up BIOS will not be changed to the Backup BIOS.

Halt On BIOS Defects : Disabled(Default), Enabled

If the BIOS occurs a checksum error or the Main BIOS occurs a WIDE RANGE PROTECTION error and Halt On BIOS Defects set to Enable, the PC will show messages on the boot screen, and the system will pause and wait for the user's instruction.

If Auto Recovery :**Disabled**, it will show **<or the other key to continue.>**

If Auto Recovery :**Enabled**, it will show **<or the other key to Auto Recover.>**

Auto Recovery : Enabled(Default), Disabled

When one of the Main BIOS or Backup BIOS occurs checksum failure, the working BIOS will automatically recover the BIOS of checksum failure.

(In the Power Management Setup of the BIOS Setting, if ACPI Suspend Type is set to Suspend to RAM, the Auto Recovery will be set to Enable automatically.)

(If you want to enter the BIOS setting, please press "Del" key when the boot screen appears.)

Boot From : Main BIOS(Default), Backup BIOS

Status 1:

The user can set to boot from main BIOS or Backup BIOS.

Status 2:

If one of the main BIOS or the Backup BIOS fails, this item "Boot From : Main BIOS(Default)" will become gray and will not be changed by user.

BIOS Recovery : Main to Backup

Auto recovery message:

BIOS Recovery: Main to Backup

The means that the Main BIOS works normally and could automatically recover the Backup BIOS.

BIOS Recovery: Backup to Main

The means that the Backup BIOS works normally and could automatically recover the Main BIOS.

(This auto recovery utility is set by system automatically and can't be changed by user.)



DualBIOS™ Technology FAQ

GIGABYTE Technology is pleased to introduce DualBIOS technology, a hot spare for your system BIOS. This newest "Value-added" feature, in a long series of innovations from GIGABYTE, is available on GA-6GXU motherboard. Future GIGABYTE motherboards will also incorporate this innovation.

What's DualBIOS™?

On GIGABYTE motherboards with DualBIOS there are physically two BIOS chips. For simplicity we'll call one your "Main BIOS" and the other we'll call your "Backup" BIOS (your "hot spare"). If your Main BIOS fails, the Backup BIOS almost automatically takes over on your next system boot. Almost automatically and with virtually zero down time! Whether the problem is a failure in flashing your BIOS or a virus or a catastrophic failure of the Main BIOS chip, the result is the same - the Backup BIOS backs you up, almost automatically.

I. Q: What is DualBIOS™ technology?

Answer:

DualBIOS technology is a patented technology from Giga-Byte Technology. The concept of this technology is based on the redundancy and fault tolerance theory. DualBIOS™ technology simply means there are two system BIOSes (ROM) integrated onto the motherboard. One is a main BIOS, and the other is a backup BIOS. The mainboard will operate normally with the main BIOS, however, if the main BIOS is corrupt or damaged for various reasons, the backup BIOS will be automatically used when the system powered-On. Your PC will operate as before the main BIOS was damaged, and is completely transparent to the user.

II. Q: Why does anyone need a motherboard with DualBIOS™ technology?

Answer:

In today's systems there are more and more BIOS failures. The most common reasons are virus attacks, BIOS upgrade failures, and/or deterioration of the BIOS (ROM) chip itself.

1. New computer viruses are being found that attack and destroy the system BIOS. They may corrupt your BIOS code, causing your PC to be unstable or even not boot normally.
2. BIOS data will be corrupted if a power loss/surge occurs, or if a user resets the system, or if the power button is pressed during the process of performing a system BIOS upgrade.
3. If a user mistakenly updates their mainboard with the incorrect BIOS file, then the system may not be able to boot correctly. This may cause the PC system hang in operation or during boot.
4. A flash ROM's life cycle is limited according to electronic characteristics. The modern PC utilizes the Plug and Play BIOS, and is updated regularly. If a user changes peripherals often, there is a slight chance of damage to the flash ROM.

With Giga-Byte Technology's patented DualBIOS™ technology you can reduce the possibility of hangs during system boot up, and/or loss BIOS data due to above reasons. This new technology will eliminate valuable system down time and costly repair bills cause by BIOS failures.

III. Q: How does DualBIOS™ technology work?**Answer:**

1. DualBIOS™ technology provides a wide range of protection during the boot up procedure. It protects your BIOS during system POST, ESCD update, and even all the way to PNP detection/assignment.
2. DualBIOS™ provides automatic recovery for the BIOS. When the first BIOS used during boot up does not complete or if a BIOS checksum error occurs, boot-up is still possible. In the DualBIOS™ utility, the "Auto Recovery" option will guarantee that if either the main BIOS or backup BIOS is corrupted, the DualBIOS™ technology will use the good BIOS and correct the wrong BIOS automatically.
3. DualBIOS™ provides manual recovery for the BIOS. DualBIOS™ technology contains a built-in flash utility, which can flash your system BIOS from backup to main and/or visa versa. There is no need for an OS-dependent flash utility program.
4. DualBIOS™ contains a one-way flash utility. The built-in one-way flash utility will ensure that the corrupt BIOS is not mistaken as the good BIOS during recovery and that the correct BIOS (main vs. backup) will be flashed. This will prevent the good BIOS from being flashed.

IV. Q: Who Needs DualBIOS™ technology?**Answer:**

1. Every user should have DualBIOS™ technology due to the advancement of computer viruses.
Everyday, there are new BIOS-type viruses discovered that will destroy your system BIOS. Most commercial products on the market do not have solutions to guard against this type of virus intrusion. The DualBIOS™ technology will provide a state-of-the-art solution to protect your PC:
Case I.) Vicious computer viruses may wipe out your entire system BIOS. With a conventional single system BIOS PC, the PC will not be functional until it is sent for repairs.
Case II.) If the "Auto Recovery" option is enabled in the DualBIOS™ utility, and if a virus corrupts your system BIOS, the backup BIOS will automatically reboot the system and correct the main BIOS.
Case III.) A user may override booting from the main system BIOS. The DualBIOS™ utility may be entered to manually change the boot sequence to boot from the backup BIOS.

2. During or after a BIOS upgrade, if DualBIOS™ detects that the main BIOS is corrupt, the backup BIOS will take over the boot-up process automatically. Moreover, it will verify the main and backup BIOS checksums when booting-up. DualBIOS™ technology examines the checksum of the main and backup BIOS while the system is powered on to guarantee your BIOS operates properly.
3. Power Users will have the advantage of having two BIOS versions on their mainboard. The benefit is being able to select either version BIOS to suit the performance system needs.
4. Flexibility for high-end desktop PCs and workstation/servers. In the DualBIOS™ utility, the option can be set, "Halt On When BIOS Defects," to be enabled to halt your system with a warning message that the main BIOS has been corrupted. Most workstation/servers require constant operation to guarantee services have not been interrupted. In this situation, the "Halt On When BIOS Defects" message may be disabled to avoid system pauses during normal booting. Another advantage you gain from Giga-Byte's DualBIOS™ technology is the ability to upgrade from dual 2 Mbit BIOS to dual 4 Mbit BIOS in the future if extra BIOS storage is need.