KA11

MAINBOARD MANUAL

DOC No.: M99203
Rev. : A0
Date : 10, 1999
Part No. : 25-10959-20

Handling Precautions

Warning:

1. Static electricity may cause damage to the integrated circuits on the motherboard. Before handling any motherboard outside of its protective packaging, ensure that there is no static electric charge in your body.
2. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer' s instructions.

Observe the following basic precautions when handling the motherboard or other computer components:

- Wear a static wrist strap which fits around your wrist and is connected to a natural earth ground.
- Touch a grounded or anti-static surface or a metal fixture such as a water pipe.
- Avoid contacting the components on add-on cards, motherboards, and modules with the *golden fingers* connectors plugged into the expansion slot. It is best to handle system components by their monting brackets.

The above methods prevent static build-up and cause it to be discharged properly.

Trademark

All trademarks mentioned in this manual are registered properly of the respective owners.

Handling Precautions

Table of Contents

Overview

The 1stMainboard KA11 is the industry's first Pentium® III ready Mainboard supporting 133 MHz Front Side Bus (FSB). With 133 MHz FSB, the 1stMainboard KA11 moves towards bridging the gap between system performance and ever increasing processor speeds. The CPU converter card allows support for the Socket 370 architecture.

Support for AGP 4x bandwidth increases the AGP bus from 66 MHz to 133 MHz, providing improved data transfer speeds for graphics applications and reducing power consumption. Based around the state-of-the-art architecture of the new VIA Apollo Pro 133A & Mobile South chipset, the KA11 has 4 DIMM for up to 1 GB of SDRAM.

The 1stMainboard KA11is also the first motherboard to come equipped with the new NOVUS range of innovative features. One of the features of NOVUS is *AudioAlert!*, the World's first voice warning system for motherboards. In the event of no CPU, memory or VGA being detected, the *AudioAlert!* facility will provide an audible voice warning.

Other features include *EasyKey,* which provides instant keyboard access to the BIOS for adjustments to Clock and Default settings, and *LogoGenie,* which allows you to create your own customized logo to be displayed during system boot up. The *BIOS Guardian* is an Anti Virus utility that prevents viruses from damaging your system BIOS and rendering your system inoperative.

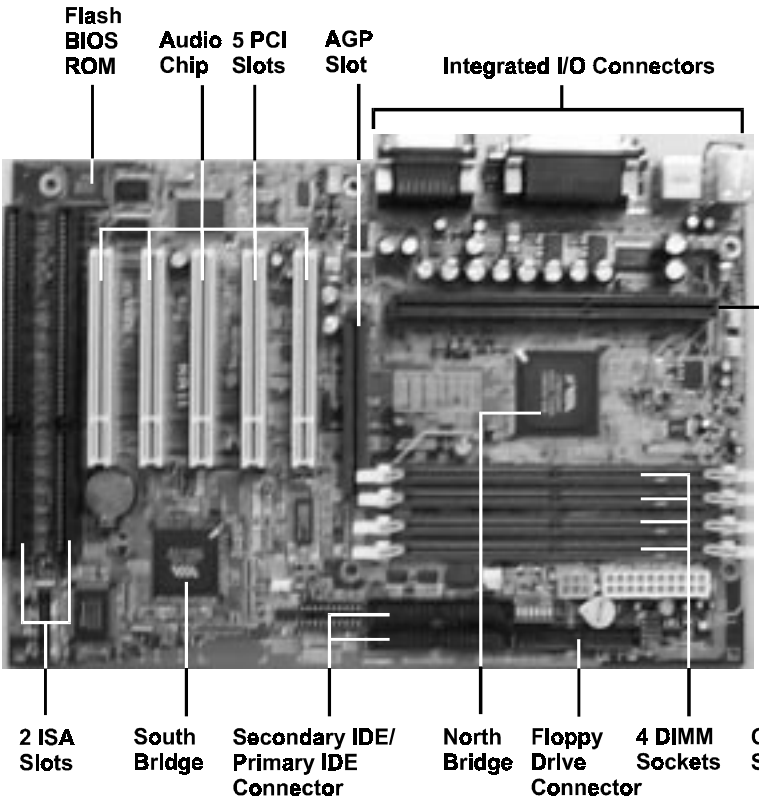
Support for the Ultra DMA/66 protocol and its high-speed interface further ensures that data transfer speeds are improved, especially for long sequential transfers required by audio/visual applications. The KA11 also boasts Auto Power Failure Recovery and Keyboard/Mouse Power On functions, and has plenty of room for expansion through 1 AGP, 5 PCI and 2 ISA slot. The ATX sized solution is also PC98 and Y2K compliant.

Package Checklist

If you discover any item below was damaged or lost, please contact your vendor.

- Ö The mainboard
- Ö This user manual
- Ö One floppy disk drive cable
- Ö One HDD cable
- Ö Software utilities

The KA11 Mainboard



Main Features

- Easy Installation

  BIOS with support for Plug and Play, auto detection of IDE hard drives, LS-120 drives, IDE ZIP drives, Windows 95, Windows 98, Windows NT 4.0, Windows 2000, and OS/2.

- Leading Edge Chipset

  VIA Apollo Pro 694X and 596B provide integrated DRAM controllers with new Dynamic Power Management Architecture (DPMA), concurrent PCI (2.0/2.1), AGP 1.0 compliant and USB.

- Flexible Processor Support

  Onboard CPU Slot supports:
  Intel® Pentium® III 450-733 MHz at 100/133 Front Side Bus
  Intel Pentium® II 233-450 MHz at 66/100 Front Side Bus
  Intel® Celeron™ 266-433 MHz at 66 MHz Front Side Bus
  Intel® Celeron™ PPGA 300-533 MHz at 66/100 Front Side Bus via CPU converter card.

- Versatile Main Memory Support

  Accepts up to 1GB DRAM using four DIMMs of 8, 16, 32, 64, 128, 256MB with support for lightning-fast SDRAM (66/100/133MHz). The latest Virtual Channel Memory (VCM) SDRAM also supported.

- Enhanced PCI Bus Master IDE Controller with Ultra DMA/33 and Ultra DMA/66 Support

  Integrated Enhanced PCI Bus Master IDE controller features two dual-channel connectors that accept up to four Enhanced IDE devices, including CD-ROM and Tape Backup Drives, as well as Hard Disk Drives supporting the new Ultra DMA/66 protocol. Standard PIO Mode 3, PIO Mode 4, DMA Mode 2, DMA Mode 4 devices are also supported.

- AGP, ISA, and PCI Expansion Slots

  One AGP Bus expansion slot, five PCI Bus expansion slots, and two ISA Bus provide the room to install a full range of add-on cards.

- Super Multi Input/Output (I/O) Support

  Integrated Plug and Play multi-I/O chipset features one high-speed UART 16550 compatible serial ports, one infrared port, one EPP/ECP capable parallel port, and one FDD connector.

- Convenient Rear Panel USB Connection Support

  Two USB ports integrated in the rear I/O panel with one manufacturing optional USB connector for front panel connection allow convenient and high-speed Plug and Play connections to the growing number of USB compliant peripheral devices on the market.

- Remote Wake On LAN Support

  Onboard Wake On LAN (WOL) connector allows remote management on your network even the system is power off. The feature provides a simpler and convenient control to LAN-based networks.

- Onboard Accelerated Graphics Port (AGP)

  The motherboard is installed one 32-bit AGP bus with a dedicated 66MHz/133MHz path from the graphics card to the system memory (in 4x mode) offering much greater bandwidth than the 32-bit PCI bus does. The board is fully compliant with the AGP 1.0 specification. AGP enabled 3D graphics cards can directly access main memory across this fast path instead of using local memory. To make use of the improved AGP performance, the motherboard should be installed with SDRAM type memory and the VGA card and drivers should also be fully AGP compliant. Using Microsoft's Windows 98 and Windows 2000 which implement DirectDraw will allow the system to take full use of AGP's benefits without the need to install additional drivers.

ACPI Ready

This mainboard fully implements the new ACPI (Advanced Configuration and Power Interface) 1.0 Hardware and BIOS requirement. If you install ACPI aware operating system, such as Windows 98, you fully utilized the power saving under ACPI.

It is compatible with all other none ACPI operating systems. If you want to setup ACPI feature under Windows 98, please follow the description below:
Run Windows 98 setup by using **setup/p j** on the command line for installing Windows 98 with the ACPI control feature.
If you type **setup** without the parameter **/p j**, Windows 98 will be installed as APM, PnP mode, no ACPI will be used.

For more detail information, please visit the web site of Microsoft. Its address is: www.microsoft.com/hwtest/.

FIC Unique Innovation for Users (NOVUS) -

Enhanced Mainboard Features and System Support

- LogoGenie
  A user friendly GUI supporting Windows 98, LogoGenie allows you to customize, create or select a Logo which will be displayed when the system is booting.

  Before execute this LogoGenie function, please make sure the related BIOS feature, BIOS Guardian, is disabled; and refer to its related README file.

NOTE:
1. LogGenie supports Award BIOS only.
2. If you create a Logo file (.bmp) by LogoGenie, the file size must be 640 x 464 x 16 colors (around 145K).

To enable this utility, please proceed as follows:

1. Insert CD Pro 4.X. Select LogoGenie from the Menu and follow the installation instructions.
2. After LogoGenie has been installed, go to Windows Start Box. In Programs Menu, select LogoGenie.
   Click three check boxes in the pop-up menu for making sure of the BIOS feature (*BIOS Guardian*) and other anti-virus software are disabled. Read README file carefully. After all these, the next procedure proceeds.
3. In LogoGenie Dialogue Box, choose one of 3 options; and then proceed as introduced in 4 or 5 steps listed on the left hand side of the Dialogue Box.
4. After complete the last step, press OK. The system will reboot to restore the BIOS with your new customized Logo.
5. The system will automatically restart with your customized Logo that appears in background.

WARNING: While excute Step3 below, please do not turn off the sytsem power in order to avoid BIOS damage.

■ BIOS Guardian

BIOS Guardian by default is enabled. It must be disabled in order to reflash BIOS, thus effectively acts as a fire-wall against viruses that can attack the BIOS while the system is running.

BIOS Guardian can be disabled as follows:

1. Go to BIOS Set Up Menu. (Press **Del** key while booting.)
2. Go to Chipset Features Set Up Submenu.
3. Disable BIOS Guardian.
4. Save the setting, and restart system.

NOTE: However, if it is disabled and while boot the system, the POST screen will be held and shows you the message to let you know the current status of BIOS Guardian. To press **G** key will enable the BIOS Guardian again; or simply to press the **space bar** will continue the booting process.

■ Easy Key

Instead of completing the multi-layered BIOS setup process these 3 Easy Key functions provide direct access to Sub-Menu's when completing BIOS settings adjustments.

Easy-Keys are as follows:

Ctrl + c: To enter clock settings menu.
Ctrl + p: To load Performance Default settings and restart.
Ctrl + f: To load Fail-Safe Default settings and restart.

■ Audio Alert

After complete a system upgrade, should the computer be assembled incorrectly, a friendly onboard voice caution, will advice of the error during system boot up.

A convenient onboard LED will also flash, waring that there is a system problem. If you do not hear the Audio Alert , please check that your speakers are connected.

Audio warning are activated as follows:

No CPU: 'Caution! CPU not detected. Please check your PC'
No Memory: 'Caution! Memory not detected. Please check your PC'
No Graphics: 'Caution! VGA not detected. Please check your PC'

■ Overclock Partner

Should the system not start because clock speed settings have been increased to a speed incompatible with the system, the Overclock Partner allows you to reboot at system default settings, protecting hardware from any damages caused by changes to the BIOS.

Complete the following steps:

1. Turn the system off.
2. Restart while holding down the **Insert** key. It is important that the **Insert** key is held down until the default clock speed is shown on the POST screen.
3. Enter BIOS setting menu, and re-set clock speed desired or default.

This Page Left Blank for Note

Installation Procedures

The mainboard has several user-adjustable jumpers on the board that allow you to configure your system to suit your requirements. This chapter contains information on the various jumper settings on your mainboard.

To set up your computer, you must complete the following steps:

- Step 1 - **Set system jumpers**
- Step 2 - **Install system RAM modules**
- Step 3 - **Install the Central Processing Unit (CPU)**
- Step 4 - **Install expansion cards**
- Step 5 - **Connect ribbon cables, cabinet wires, and power supply**
- Step 6 - **Set up BIOS software** (see Chapter Three)
- Step 7 - **Set up supporting software tools**

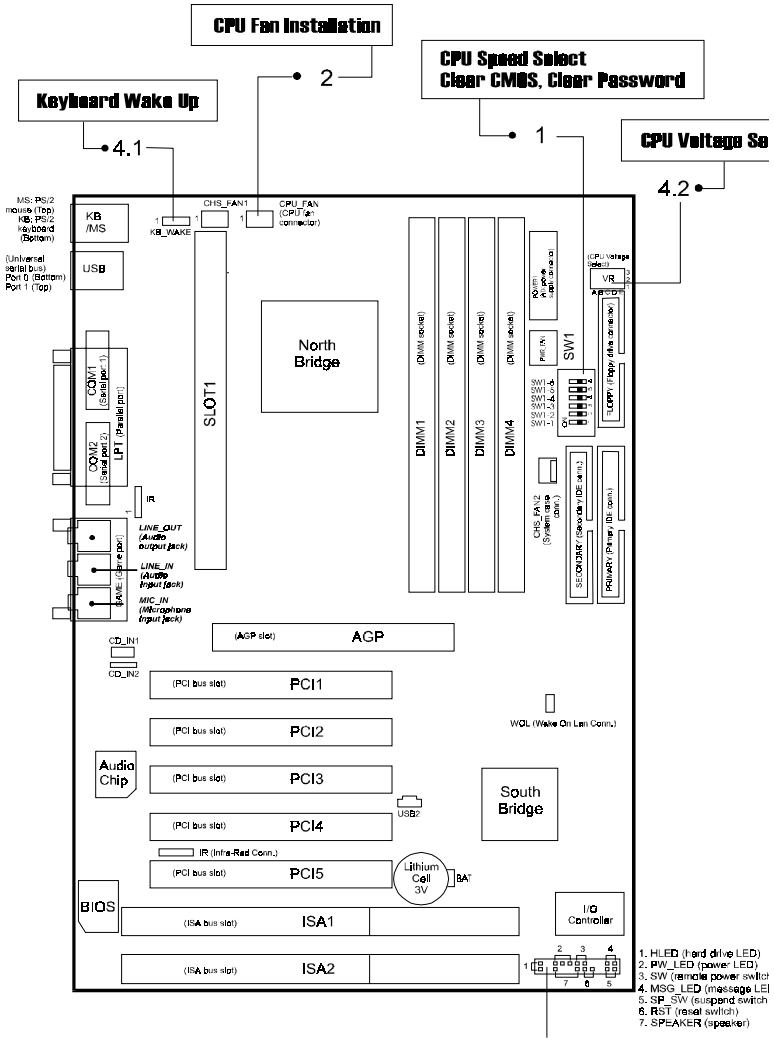
WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm.

Mainboard components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the mainboard's sensitive components, you should follow some precautions whenever working on the computer:

1. Unplug the computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Wear an anti-static wrist strap which fits around the wrist.
4. Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.

QUICK REFERENCE

This Chapter is intended to aid quick and easy installation. In the event that more detailed information is required, please consult the Installation Procedures Chapter.


CPU Fan Installation
2
CPU Speed Select
Clear CMOS, Clear Password
1
Keyboard Wake Up
4.1
CPU Voltage Se
4.2
MS: PS/2 mouse (Top)
KB: PS/2 keyboard (Bottom)
KB /MS
(Universal serial bus) Port 0 (Bottom) Port 1 (Top)
USB
CHS_FAN1
CPU_FAN (CPU Fan connector)
KB_WAKE
North Bridge
SLOT1
DIMM1
DIMM2
DIMM3
DIMM4
(DIMM socket)
SW1
(CPU Voltage Select)
VR
COM1 (Serial port 1)
COM2 (Serial port 2)
LPT (Parallel port)
IR
LINE_OUT (Audio output jack)
LINE_IN (Audio input jack)
MIC_IN (Microphone input jack)
GAME (Game port)
CD_IN1
CD_IN2
(AGP slot)
AGP
(PCI bus slot)
PCI1
PCI2
PCI3
PCI4
PCI5
WOL (Wake On Lan Conn.)
Audio Chip
South Bridge
USB2
IR (Infra-Red Conn.)
Lithium Cell 3V
BAT
BIOS
(ISA bus slot)
ISA1
ISA2
I/O Controller
1. HLED (Hard drive LED)
2. PW_LED (power LED)
3. SW (remote power switch
4. MSG_LED (message LE
5. SP_SW (suspend switch
6. RST (reset switch)
7. SPEAKER (speaker)

1). CPU Speed Select, Clear CMOS, Clear Password

CPU Speed (Hz)			SW1-1	SW1-2	SW1-3	SW1-4
133M	100M	66M				
466M	350M	233M	ON	ON	OFF	OFF
533M	400M	266M	ON	OFF	ON	ON
600M	450M	300M	ON	OFF	ON	OFF
667M	500M	333M	ON	OFF	OFF	ON
733M	550M	366M	ON	OFF	OFF	OFF
800M	600M	400M	OFF	ON	ON	ON
866M	650M	433M	OFF	ON	ON	OFF
933M	700M	466M	OFF	ON	OFF	ON
1G	750M	500M	OFF	ON	OFF	OFF
1066M	800M	533M	OFF	OFF	ON	ON

SW1-5 (Clear CMOS)

Enable (Clear CMOS)

Disable (Default)

SW1-6 (Clear Password)

Enable (Clear Password)

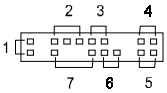
Disable (L

2). CPU Fan Installation

This connector is linked to the CPU fan. When the system is in suspend mode, the CPU fan will turn off; when it reverts back to full on mode, the fan will turn back on. Without sufficient air circulation, the CPU may overheat and cause damage to both the CPU and the mainboard.

Damage may occur to the mainboard and/or the CPU fan if these pins are incorrectly used. These are not jumpers, do not place jumper caps over these pins.

3). Front Panel Block Cable Connection



1. HDD LED
2. Power LED
3. Remote Power Switch
4. Message LED
5. Suspend Switch
6. Reset Switch
7. Speaker

4). Other Enabled/Disabled Jumpers

4.1 KB_WAKE (Keyboard Wake Up)

Enable

Disable

WARNING: The table below provides users with the jumper settings if they want to set CPU voltage for overclocking. Before set this jumper, please check the CPU specification to avoid CPU damage.

4.2 VR (CPU Voltage Select)

Default Settings: Pin cap set at pin pair
2-3 for automatic detection of CPU voltage

CPU Voltage	*A*	*B*	*C*	*D*	*E*
1.3V	-	-	-	-	1-2
1.35V	1-2	-	-	-	1-2
1.4V	-	1-2	-	-	1-2
1.45V	1-2	1-2	-	-	1-2
1.5V	-	-	1-2	-	1-2
1.55V	1-2	-	1-2	-	1-2
1.6V	-	1-2	1-2	-	1-2
1.65V	1-2	1-2	1-2	-	1-2
1.7V	-	-	-	1-2	1-2
1.75V	1-2	-	-	1-2	1-2
1.8V	-	1-2	-	1-2	1-2
1.85V	1-2	1-2	-	1-2	1-2
1.9V	-	-	1-2	1-2	1-2
1.95V	1-2	-	1-2	1-2	1-2

CPU Voltage	A	B	C	D	E
2.0V	-	1-2	1-2	1-2	1-2
2.05V	1-2	1-2	1-2	1-2	1-2
2.1V	1-2	-	-	-	-
2.2V	-	1-2	-	-	-
2.3V	1-2	1-2	-	-	-
2.4V	-	-	1-2	-	-
2.5V	1-2	-	1-2	-	-
2.6V	-	1-2	1-2	-	-
2.7V	1-2	1-2	1-2	-	-
2.8V	-	-	-	1-2	-
2.9V	1-2	-	-	1-2	-
3.0V	-	1-2	-	1-2	-
3.1V	1-2	1-2	-	1-2	-
3.2V	-	-	1-2	1-2	-
3.3V	1-2	-	1-2	1-2	-
3.4V	-	1-2	1-2	1-2	-
3.5V	1-2	1-2	1-2	1-2	-

5). Load BIOS Setup Default

Load BIOS Defaults

BIOS defaults contain the most appropriate values of the system parameters that allow minimum system performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burns into the ROM.

Load Setup Defaults

Selecting *this* field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

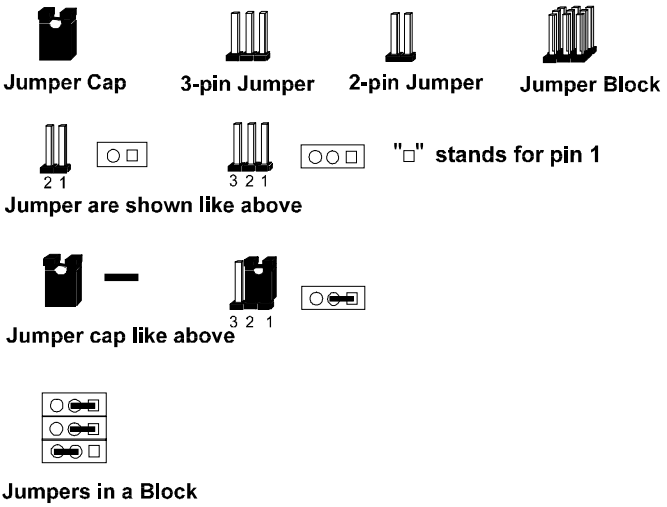
6). How to Upgrade BIOS

1. Format a bootable system floppy diskette by typing the command **format a:/s** in command mode.
2. Visit the the web site of the vendor and visit the BIOS Update page in the related Technical Support section.
3. Select the BIOS file you need and download it to your bootable floppy diskette.
4. The CD-Pro contained in the package with this mainboard provides the flash utility in the subdirectory: **\utility\flash**. (If your BIOS is Award, the subdirectory **\utility\flash\Award**. If BIOS is AMI, the subdirectory **\utility\flash\AMI**.) You need copy the flash tool to the bootable diskette.
5. Insert the bootable diskette containing the BIOS file into the floppy diskette drive.
6. Assuming that the floppy diskette drive is A, reboot the system by using the A: drive. At the A: > prompt, run the BIOS upgraded file by executing the Flash BIOS utility and the BIOS file with its appropriate extension.

Do not turn off or reset the computer during the flash process or there will be a problem booting up your system.

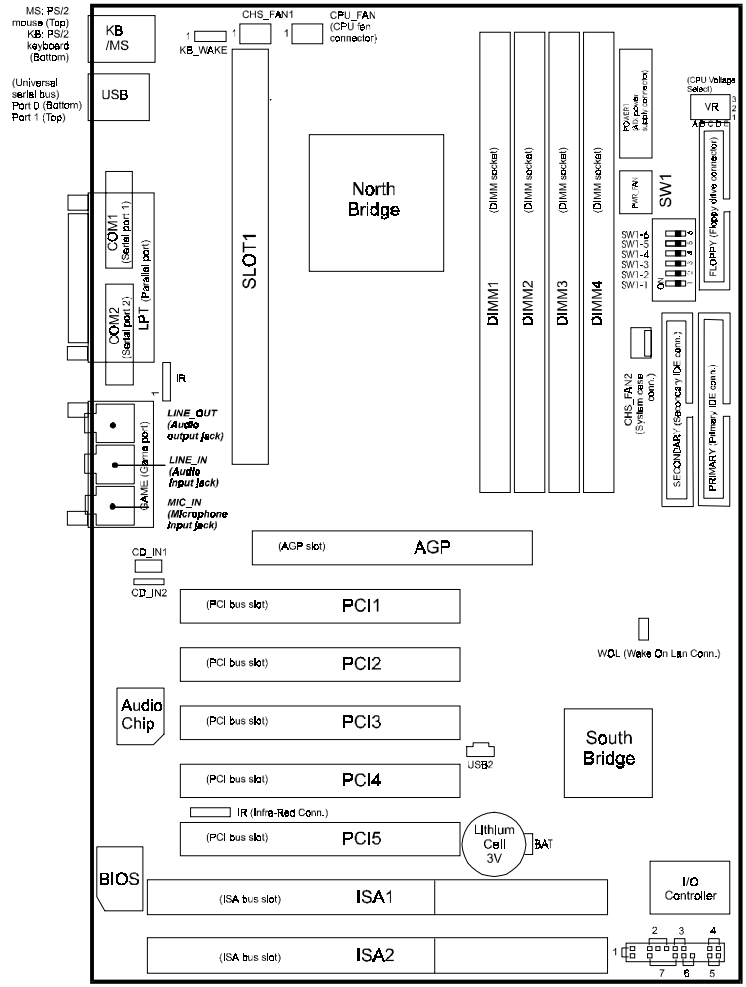
1). Set System Jumpers

Jumpers are used to select the operation modes for your system. Some jumpers on the board have three metal pins with each pin representing a different function. A "1" is written besides pin 1 on jumpers with three pins. To **set** a jumper, a black cap containing metal contacts is placed over the jumper pin/s according to the required configuration. A jumper is said to be **shorted** when the black cap has been placed on one or two of its pins. The types of jumpers used in this manual are shown below:



NOTE: Users are not encouraged to change the jumper settings not listed in this manual. Changing the jumper settings improperly may adversely affect system performance.

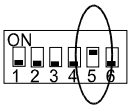
Mainboard Layout



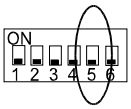
ONBOARD MARK	MEANING	PAGE
Jumpers		
SW1-5	Clear CMOS Data	2 - 12
SW1-6	Clear Password	2 - 12
KB_WAKE	Keyboard Wake-Up Feature Enable	2 - 13
Slots		
DIMM1/2/3/4	DIMM Memory Module Support	2 - 13
SLOT1	CPU Cartridge Slot	2 - 15
PCI1/2/34/5	PCI Bus Expansion Slot	2 - 18
ISA1/2	ISA Bus Expansion Slot	2 - 18
AGP	AGP Bus Expansion Slot	2 - 18
Connectors		
FLOPPY	Floppy Diskette Drive Connector	2 - 20
PRIMARY, SECONDARY	IDE HDD Device Connectors	2 - 20
POWER	ATX Power Connector	2 - 21
CPU_FAN	CPU Fan Connector	2 - 22
CHS_FAN1/2	System Case Fan Connectors	2 - 22
WOL	Wake on LAN Connector	2 - 23
CHASSIS	System Chassis Instrusion Alarm	2 - 23
IR	Infrared Port Module Connector	2 - 24
CD_IN1/2	CD Audio-Out Connector	2 - 24
PWR_FAN	Power Fan Connector	2 - 25
FPNL	Connectors for Front Panel LEDs and Switches on Front Panel	2 - 26
KB, MS	PS/2 Keyboard and Mouse Connector	2 - 27
USB0/1, USB2	Universal Serial Bus Connectors	2 - 27
LPT	Printer Connector	2 - 28
COM1/2	Serial Port Connector	2 - 28
GAME	Joystick/MIDI Device Connector	2 - 29
LINE_OUT, LINE_IN, MIC_IN	Audio I/O Jacks	2 - 29

Clear CMOS: SW1-5

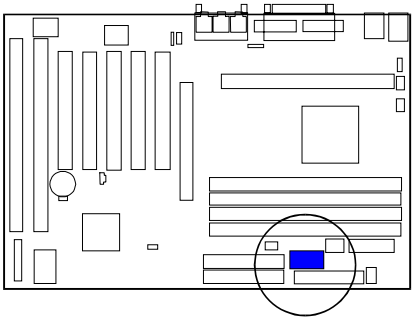
The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1) Turn off your computer. (2) Move the CMOS Clear switch SW1-5 to "On" (Enabled). (3) Turn on your computer to display "CMOS checksum error". (4) Turn off your computer. (5) Move the CMOS Clear switch SW1-5 to "Off" (Disabled). (6) Turn on your computer. (7) Hold down the **Delete** key when boots. (8) Enter the BIOS Setup to re-enter user preferences.



Enable
(Clear CMOS)

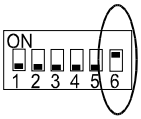


Disable (Default)

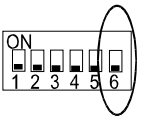


Clear Password: SW1-6

This switch allows you to enable or disable the password configuration. You may need to enable this switch by moving it to the "On" (Enabled) position if you forget your password. To clear the password setting: (1) Turn off your computer. (2) Move the Clear Password switch SW1-6 to "On" (Enabled). (3) Turn on your computer. (4) Hold down the **Delete** key during bootup and enter BIOS Setup to re-enter user preferences. (5) Turn off your computer, (6) Move the Clear Password switch SW1-6 to "Off" (Disabled). (7) Turn on your computer for the new settings to take effect.



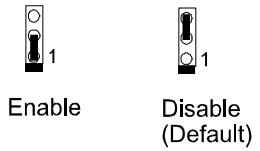
Enable
(Clear Password)

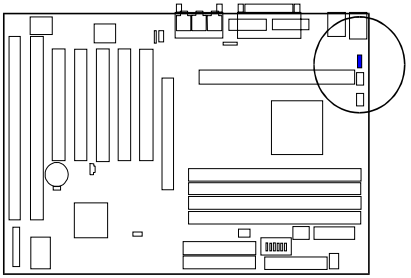


Disable (Default)

Enabling Keyboard Wake-Up Feautre: KB_WAKE

The 3-pin jumper allows you to use your keyboard to power on or wake up your computer system.





NOTE: For the mainboard to use the Keyboard Wake-up + Wake-on-LAN function, the ATX power supply used should have a current of 1AMP at 5V Stand-By. To use the Keyboard Wake-up function only without using the Wake-on-LAN function, the ATX power supply used should have a current of 400milliAmpere at 5V Stand-By.

2). Install RAM Modules

RAM Module Configuration

This mainboard provides four onboard DIMM sockets for allowing 3.3V (un-buffered) SDRAM DIMM modules. Either 8, 16, 32, 64, 128, 256MB DIMM can be installed on these four sockets. The maximum total memory supported is up to1GB.

Socket	*Acceptable Memory Module*		*Total*
1	8, 16, 32, 64, 128, 256MB 168-pin 3.3V SDRAM	x1	
2	8, 16, 32, 64, 128, 256MB 168-pin 3.3V SDRAM	x1	
3	8, 16, 32, 64, 128, 256MB 168-pin 3.3V SDRAM	x1	
4	8, 16, 32, 64, 128, 256MB 168-pin 3.3V SDRAM	x1	

Total System Memory Allowed up to 1GB =

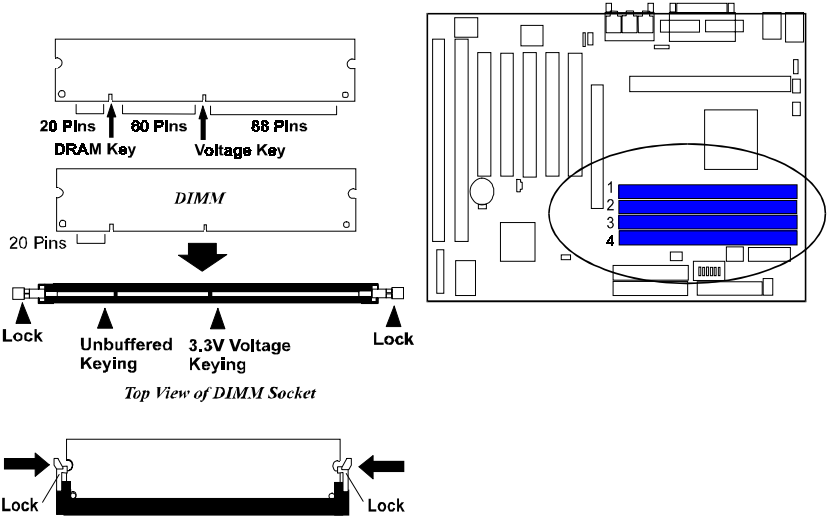
NOTE: This mainboard supports DIMMs with access speeds of 12ns, 10ns, or faster. ECC memory and parity check is also supported.

Install and Remove DIMMs

1. Locate the DIMM slots on the mainboard.

2. Install the DIMM straight down into the DIMM slot with both hands.

3. The clip on both ends of the DIMM slot will close up to hold the DIMM in place when the DIMM touches the slot's bottom.



Press the clips with both hands to remove the DIMM.

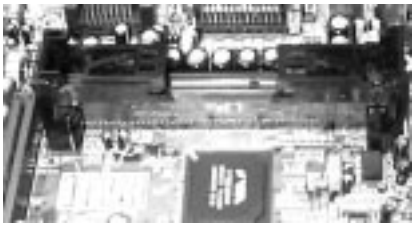
WARNING:
1. If your system runs under PC133 specification, the 4th DIMM slot is suggested to leave empty in order to avoid unstable performance.
2. VC M SDRAM is allowed, but not mix used with other DIMM types.

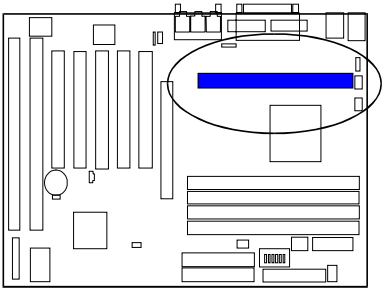
3). Install the CPU

The CPU module resides in the SLOT1 on the motherboard. The Retention Mechanism Assembly that is foldable for saving space when shipping and packing had been installed on the board by the manufacturer. Please following the steps introduced below to complete the CPU installation.

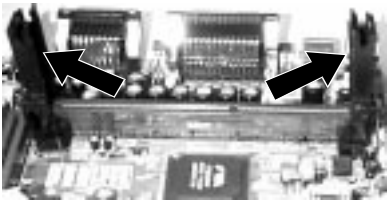
CAUTION:
1. Always turn the system power off before installing or removing any device.
2. Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.
3. Inserting the chip incorrectly may damage the chip.

1. Locate SLOT1 on the mainboard.

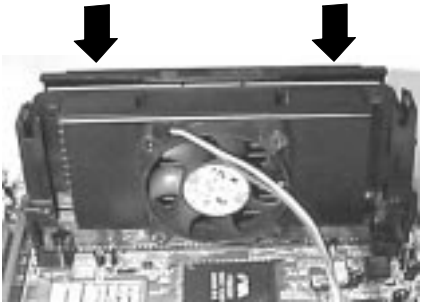




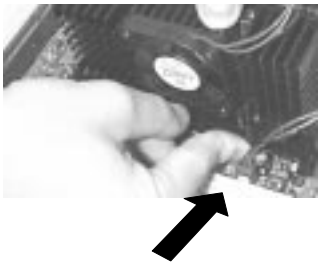
2. Pull out two columns of the Retention Mechanism Assembly upward to the right position.



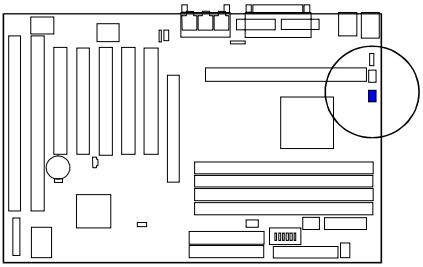
3. Insert the CPU module downward along with the columns of the Retention Mechanism Assembly until it is inserted the SLOT1 firmly.



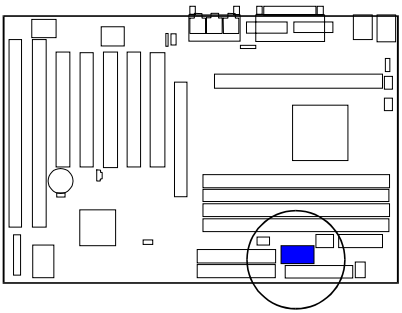
4. Hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.



5. Connect the plug of the wires that linked with the CPU fan.



CPU Frequency Selection



CPU Speed (Hz)			SW1-1	SW1-2	SW1-3	SW1-4
133M	100M	66M				
466M	350M	233M	ON	ON	OFF	OFF
533M	400M	266M	ON	OFF	ON	ON
600M	450M	300M	ON	OFF	ON	OFF
667M	500M	333M	ON	OFF	OFF	ON
733M	550M	366M	ON	OFF	OFF	OFF
800M	600M	400M	OFF	ON	ON	ON
866M	650M	433M	OFF	ON	ON	OFF
933M	700M	466M	OFF	ON	OFF	ON
1G	750M	500M	OFF	ON	OFF	OFF
1066M	800M	533M	OFF	OFF	ON	ON

CPU Voltage Selection

WARNING: The table below provides users with the jumper settings if they want to set CPU voltage for overclocking. Before set this jumper, please check the CPU specification to avoid CPU damage.

Default Settings: Pin cap set at pin pair
2-3 for automatic detection of CPU voltage

CPU Voltage	A	B	C	D	E
1.3V	-	-	-	-	1-2
1.35V	1-2	-	-	-	1-2
1.4V	-	1-2	-	-	1-2
1.45V	1-2	1-2	-	-	1-2
1.5V	-	-	1-2	-	1-2
1.55V	1-2	-	1-2	-	1-2
1.6V	-	1-2	1-2	-	1-2
1.65V	1-2	1-2	1-2	-	1-2
1.7V	-	-	-	1-2	1-2
1.75V	1-2	-	-	1-2	1-2
1.8V	-	1-2	-	1-2	1-2
1.85V	1-2	1-2	-	1-2	1-2
1.9V	-	-	1-2	1-2	1-2
1.95V	1-2	-	1-2	1-2	1-2

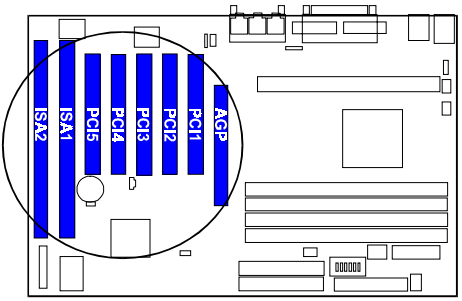
continued on the next page

CPU Voltage Selection *(continued)*

CPU Voltage	A	B	C	D	E
2.0V	-	1-2	1-2	1-2	1-2
2.05V	1-2	1-2	1-2	1-2	1-2
2.1V	1-2	-	-	-	-
2.2V	-	1-2	-	-	-
2.3V	1-2	1-2	-	-	-
2.4V	-	-	1-2	-	-
2.5V	1-2	-	1-2	-	-
2.6V	-	1-2	1-2	-	-
2.7V	1-2	1-2	1-2	-	-
2.8V	-	-	-	1-2	-
2.9V	1-2	-	-	1-2	-
3.0V	-	1-2	-	1-2	-
3.1V	1-2	1-2	-	1-2	-
3.2V	-	-	1-2	1-2	-
3.3V	1-2	-	1-2	1-2	-
3.4V	-	1-2	1-2	1-2	-
3.5V	1-2	1-2	1-2	1-2	-

4). Install Expansion Cards

This section describes how to connect an expansion card to one of your system's expansion slots. Expansion cards are printed circuit boards that, when connected to the mainboard, increase the capabilities of your system. For example, expansion cards can provide video and sound capabilities. The mainboard features five PCI bus, two ISA bus and one AGP bus expansion slots.



CAUTION: Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansioncards.
Always observe static electricity precautions.
Please read "Handling Precautions" at the start of this manual.

To install an expansion card, follow the steps below:

1. Remove the computer chassis cover and select an empty expansion slot.

2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.

3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot.

4. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this "rocking" motion until the add–on card is firmly seated inside the expansion slot.

5. Secure the board with the mounting screw removed in Step 2. Make sure that the card has been placed evenly and completely into the expansion slot.

6. Replace the computer system's cover.

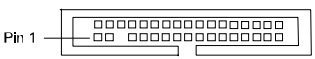
7. Setup the BIOS if necessary.

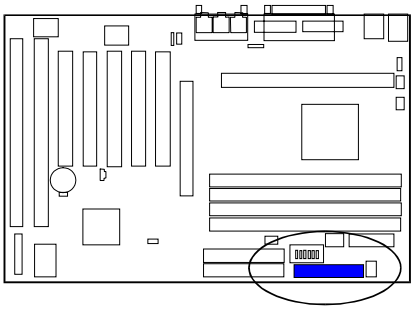
8. Install the necessary software drivers for the expansion card.

5). Connect Devices

Floppy Diskette Drive Connector: FLOPPY

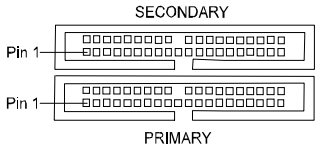
This connector provides the connection with your floppy disk drive.
The red stripe of the ribbon cable must be the same side with the Pin 1.

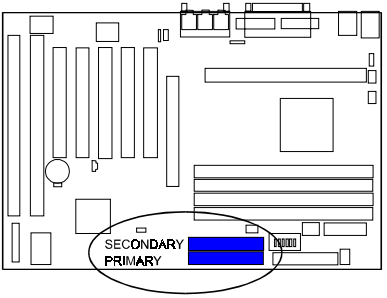




IDE HDD Device Connectors: PRIMARY, SECONDARY

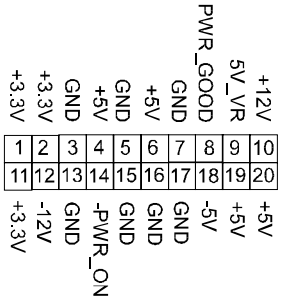
These two connectors are used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives. The red stripe of the ribbon cable must be the same side with the Pin 1.

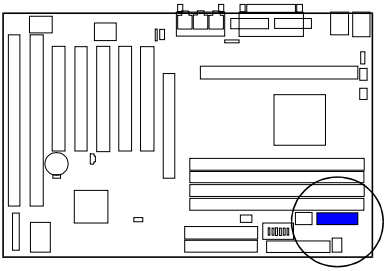




ATX Power Connector: POWER

This 20-pin male block connector is connected to the ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.

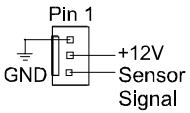


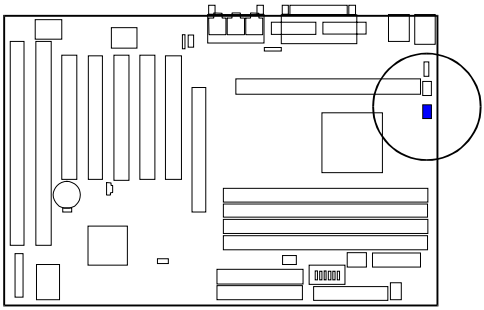


NOTE: The power supply must provide +3.3V voltage.

CPU Fan Connector: CPU_FAN

This connector is linked to the CPU fan. When the system is in suspend mode, the CPU fan will turn off; when it reverts back to full–on mode, the fan will turn back on. Please refer to the CPU fan installation manual for more information.

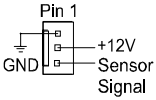




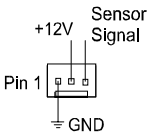
System Case Fan Connectors: CHS_FAN1, CHS_FAN2

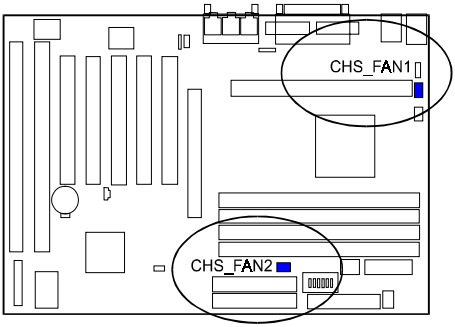
There two 3-pin connectors onboard that either one allows you to link with the cooling fan on the system case to lower the system temperature.

CHS_FAN1



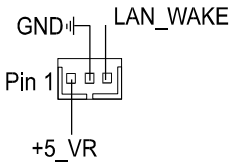
CHS_FAN2

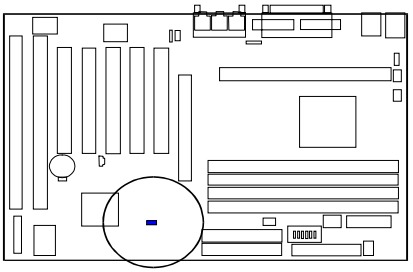




Wake-On-Lan Connector: WOL

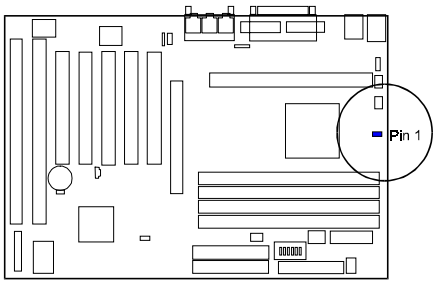
This 3-pin connector allows the remove servers to manage the system that installed this mainboard via your network adapter which also supports WOL. When you install such a LAN card, please read its installation guide for more information.





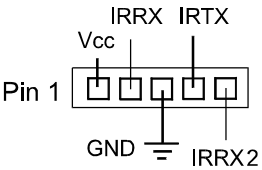
System Chassis Intrusion Alarm Connector: CHASSIS

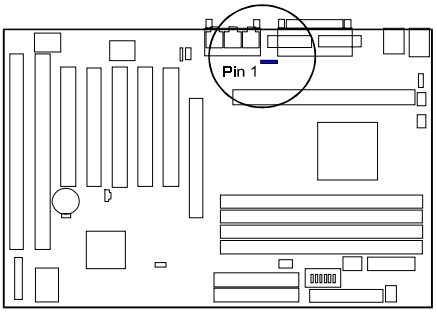
This 2-pin connector allows your system to enable or disable the system alarm if the system case being removed.



Infrared Connector: IR

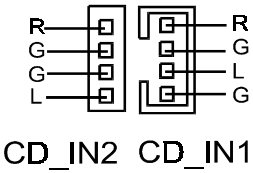
This 5-pin connector is used to link with your ID device to allow transmission of data to another system that also supports the IR feature. This module mounts to a small opening on system cases that support it.

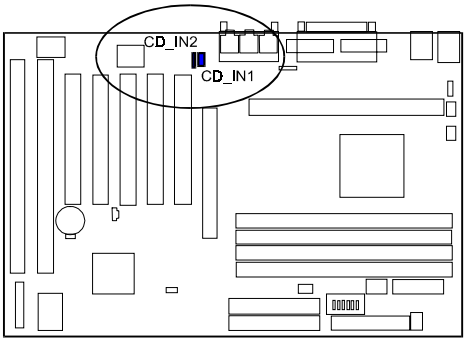




CD Aduio-Out Connectors: CD_IN1, CD_IN2

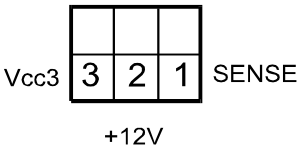
These two 4-pin connectors are used for different types of the AUDIO-OUT port of your CD drive.

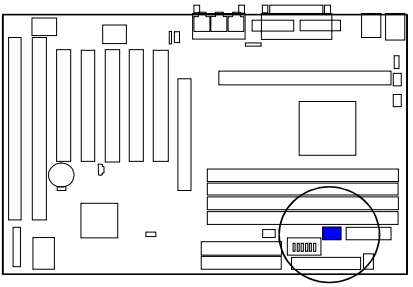




Power Fan Connector: PWR_FAN

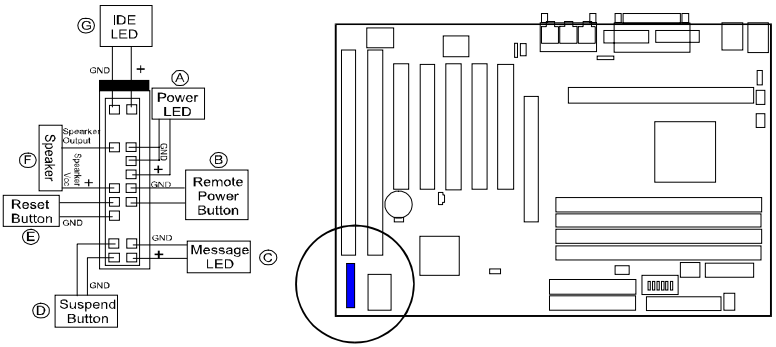
This connector is connected with your power supply that supported a 6-wire plug to lower the power supply temperature. The signal which comes from the hardware monitor chip lowers the temperature of the power supply.





Front Panel Block Connector: FPNL

This block connector concludes the connectors for linking with IDE LED, power LED, remote power button, message LED, suspend button, reset button and speaker on the front panel of the system case. Please identify polarities of plug wires for the case speaker and LEDs. Please ask vendor about this information when you buy them and install the system by yourself. The plug wires' polarities of this buttons will not affect the function.



Power LED (A) is connected with the system power indicator to indicate whether the system is on/off. When the system enter the suspend mode, it blinks.

Remote Power Button (B) is connected with remote power (soft power) switch. Push this switch will turn off and on the system instead of turning the power switch on the power supply.

Message LED (C) is connected with the message LED. When the system is running normally, the indicator is off. It is controlled by the operating system or application software.

Suspend Button (D) is connected with suspend mode switch.

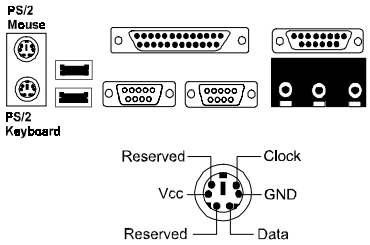
Reset Button (E) is connected to the reset switch. Push this switch to reboot the system instead of turning power switch off and on.

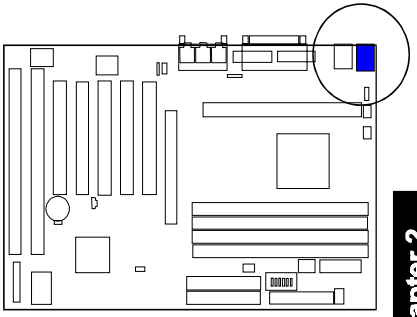
Speaker (F) is connected with the case speaker.

IDE LED (G) is connected IDE device indicator. This LED will blink when the hard disk drives are activated.

PS/2 Keyboard and Mouse Connector: KB, MS

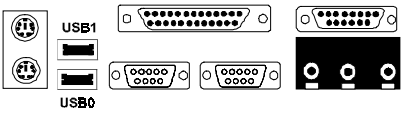
These two 6-pin female connectors are used for your PS/2 keyboard and PS/2 mouse.

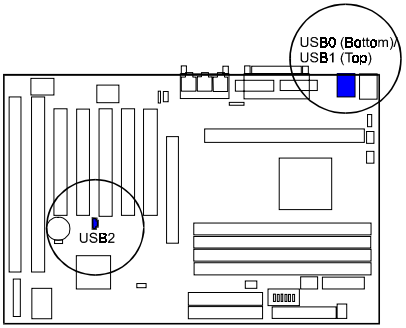




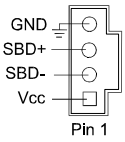
Universal Serial Bus Connectors: USB0, USB1, USB2 (optional)

These two connectors that integrated on the edge of the board are used for linking with USB peripheral devices. Also, this board provides an manufacturing optional connector USB2 for linking with the USB socket on the front panel of some system cases. If USB2 connector is used, it will make either USB0 or USB1 disabled. Your operating system must support USB features, such as MS Windows 98, MS Windows 95 OSR2.5 with USB Supplement.



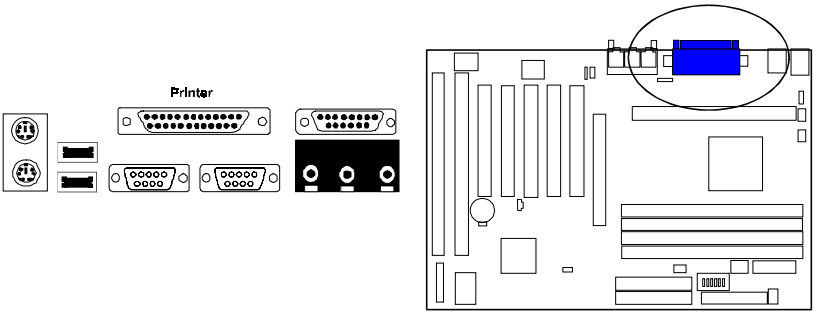


The figure below is the pin assignmen of the manufacturing optional USB2 connector for front panel USB connection.



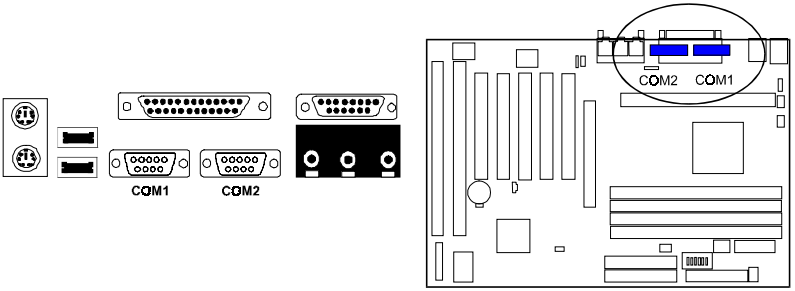
Printer Connector: LPT

This 25-pin D-Sub female connector is attached to your printer.



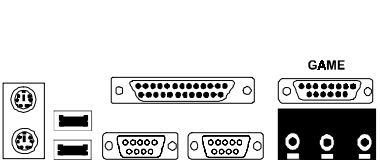
Serial Port Connectors: COM1, COM2

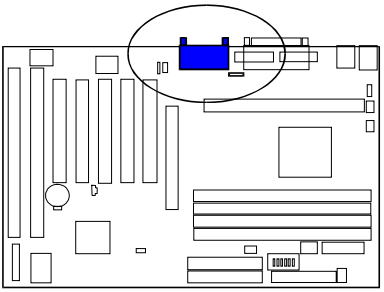
COM1 and COM2 allow you to connect with your devices that use serial ports, such as a serial mouse or an external modem.



GAME/MIDI Connector: GAME

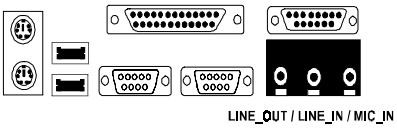
This 15-pin female connector allows you to connect game joysticks or game pads for playing games. Connect MIDI devices for playing or editing audio.

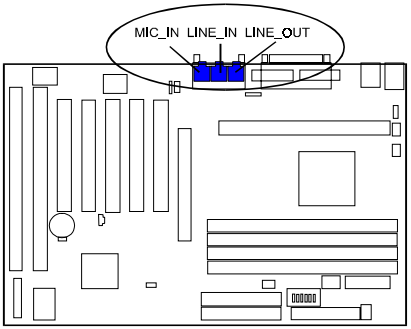




Audio I/O Jacks: LINE_OUT, LINE_IN, MIC_IN

LINE_OUT can be connected to headphones or preferably powered speakers. LINE_IN allows tape players or other audio sources to be recorded by your computer or played through the LINE_OUT. MIC_IN allows microphones to be connected for input voice.



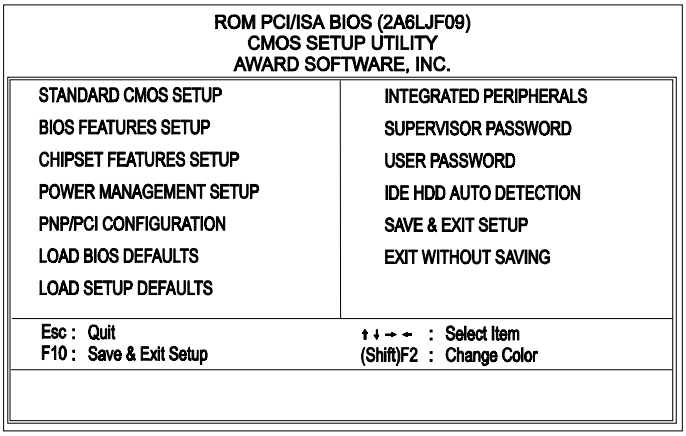


This Page Left Blank for Note

BIOS Setup

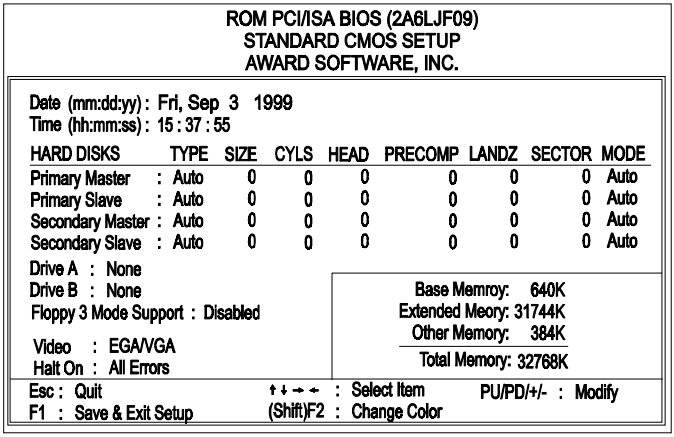
The mainboard comes with the Award BIOS chipthat contains the ROM Setup information of your system. This chip serves as an interface between the processor and the rest of the mainboard's components. This section explains the information contained in the Setup program and tells you how to modify the settings according to your system configuration.

CMOS Setup Utility



A Setup program, built into the system BIOS, is stored in the CMOS RAM. This Setup utility program allows changes to the mainboard configuration settings. It is executed when the user changes system configuration; user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. Use the arrow keys to select and press **Enter** to run the selected program.

Standard CMOS Setup



The Standard CMOS Setup screen is displayed above. Each item may have one or more option settings. The system BIOS automatically detects memory size, thus no changes are necessary. Use the arrow keys to highlight the item and then use **PgUp** or **PgDn** keys to select the value you want in each item.

Hard Disk Configurations

TYPE: Select *User* to fill the remaining fields. Select *Auto* to detect the HDD type automatically (recommended).

SIZE: The hard disk size. The unit is Mega Bytes.

CYLS: The cylinder number of the hard disk.

HEAD: The read/write head number of hard disk.

PRECOMP: The cylinder number at which the disk drive changes the write current.

LANDZ: The cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.

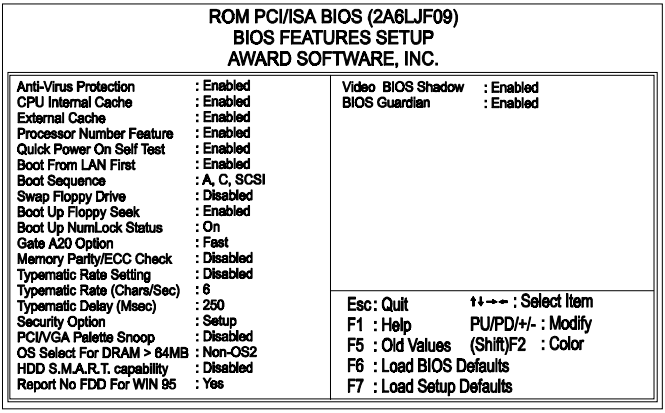
SECTOR: The sector number of each track defined on the hard disk.

MODE: Select *Auto* to detect the mode type automatically. If your hard disk supports the LBA mode, select *LBA* or *Large*. However, if your hard disk cylinder is more than 1024 and does not support the LBA function, set at *Large*. Select *Normal* if your hard disk supporting cylinders is below 1024.

Software Turbo Speed

The BIOS supports Software Turbo Speed feature. Instead of pressing the Turbo Speed Button on the front panel, simply press the **Alt, Ctrl, and +** keys at the same time to enable the Turbo Speed feature; and press the **Alt, Ctrl, and -** keys at the same time to disable the feature.

BIOS Features Setup



Anti-Virus Protection

This feature starts the virus scan tool to detect if boot virus in boot sector of the first hard disk drive when booting up.
The options are: Enabled (Default), Disabled.

CPU Internal Cache

When enabled, improves the system performance. Disable this item when testing or trouble-shooting. The options are: Enabled (Default), Disabled.

External Cache

When enabled, supports an optional cache SRAM. This feature allows you to disable the cache function when the system performance is unstable to run some software. The options are: Enabled (Default), Disabled.

Processor Number Feature

If a Pentium III processor is installed on this mainboard, the system BIOS will allow other utilities to access the Intel Pentium III serial number while this feature set at Enabled. The options are: Enabled (Default), Disabled.

Quick Power On Self Test

When enabled, allows the BIOS to bypass the extensive memory test. The options are: Enabled (Default), Disabled.

Boot From LAN First

This feature makes the system bootable by the remote server via LAN. The options are: Enabled (Default), Disabled.

Boot Sequence

Allows the system BIOS to first try to boot the operating system from the selected disk drive. The options are: A, C, SCSI (Default); C, A, SCSI; C, CDROM, A; CDROM, C, A; D, A, SCSI; E, A, SCSI; F, A, SCSI; SCSI, A, C; SCSI, C, A; C Only; LS/ZIP, C.

Swap Floppy Drive

Allows you to switch the order in which the operating system accesses the floppy drives during boot up.
The options are: Enabled, Disabled (Default).

Boot Up Floppy Seek

When enabled, assigns the BIOS to perform floppy diskette drive tests by issuing the time-consuming seek commands. The options are: Enabled (Default), Disabled.

Boot Up Numlock Status

When set to On, allows the BIOS to automatically enable the Num Lock Function when the system boots up. The options are: On (Default), Off.

Gate A20 Option

When set at Fast, allows a faster access response under Protected mode. The options are: Fast (Default), Normal.

Memory Parity Check/ECC Check

This feature enables BIOS to perform automatic memory checking upon detection of ECC or parity DRAM.
The options are: Enabled, Disabled (Default).

Typematic Rate Setting

The term typematic means that when a keyboard key is held down, the character is repeatedly entered until the key is released.
The options are: Disabled (Default), Enabled.

Typematic Rate (Chars/Sec)

This feature is available only if the above item, Typematic Rate Setting, is set at Enabled. Sets the rate of a character repeat when the key is held down.
The options are: 6 (Default), 8, 10, 12, 15, 20, 24, 30.

Typematic Delay (Msec)

This feature is available only if the item, Typematic Rate Setting, is set at Enabled. Sets the delay time before a character is repeated.
The options are: 250 (Default), 500, 750, 1000 millisecond.

Security Option

Allows you to set the security level of the system.
The options are: Setup (Default), System.

PCI/VGA Palette Snoop

Set this feature to be enabled if any ISA adapter card installed in the system requires the VGA palette snoop function.
The options are: Disabled (Default), Enabled.

OS Select For DRAM > 64MB

If your operating system (OS) is OS/2, select the option OS2. Otherwise, stay with the default setting Non-OS2.
The options are: Non-OS2 (Default), OS2.

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

S.M.A.R.T. stands for Self-Monitoring and Analysis Reporting Technology which allows your hard disk drive to report any read/write errors and issues a warning with LDCM installed.
The options are: Disabled (Default); Enabled.

Report No FDD For WIN 95

When the field under the Standard CMOS Setup Menu for Drive A and/or Drive B is set at None, users must set this field is set at Yes for it to function properly. Otherwise, set at No, even if field for Drive A and/or Drive B is set at None, system will still detect and recognize of a floppy drive(s).
The options are: Yes (Default), No.

Video BIOS Shadow

Allows the BIOS to copy the video ROM code of the add-on video card to the system memory for faster access.
The options are: Enabled (Default), Disabled.

BIOS Guardian

It allows the system to prevent computer viruses. Users will need to disable it to update BIOS.
The options are: Enabled (Default), Disabled.

Chipset Features Setup

ROM PCI/ISA BIOS (2A6LJF09)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Bank 0/1 DRAM Timing	: SDRAM 10ns	CPU Warning Temperature	: Disabled
Bank 2/3 DRAM Timing	: SDRAM 10ns	Current System Temp.	:
Bank 4/5 DRAM Timing	: SDRAM 10ns	Current CPU1 Temperature	:
Bank 6/7 DRAM Timing	: SDRAM 10ns	Current CPU Fan Speed	:
SDRAM Cycle Length	: Auto	Current Chassis Fan Speed	:
DRAM Clock	: Auto	Current Power Fan Speed	:
Memory Hole	: Disabled	IN0 (V) IN2(V)	:
P2C/C2P Concurrency	: Enabled	+ 5 V +12 V	:
Fast R-W Turn Around	: Disabled	-12 V - 5 V	: -
System BIOS Cacheable	: Enabled	VBAT(V) 5SVB(V)	:
Video RAM Cacheable	: Disabled	Shutdown Temperature	: 70°C/ 158°F
AGP Aperture Size	: 64M		
AGP-4X Mode	: Enabled		
AGP Fast Write	: Disabled	Esc : Quit	↑↓→← : Select Item
OnChip USB	: Enabled	F1 : Help	PU/PD/+/- : Modify
USB Keyboard Support	: Disabled	F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
Auto Detect DIMM/PCI Clk	: Enabled	F7 : Load Setup Defaults	
Spread Spectrum	: Enabled		
CPU Host/PCI Clock	: Default		

Bank 0/1 DRAM Timing; Bank 2/3 DRAM Timing; Bank 4/5 DRAM Timing; Bank 6/7 DRAM Timing

This feature allows you to select the DRAM read/write speed.
The options are: SDRAM 10ns (Default), SDRAM 8ns, Normal, Medium, Fast, Turbo.

SDRAM Cycle Length

This item will function only when SDRAM DIMM/s are installed on the mainboard (BIOS auto detection). If the CAS latency of your SDRAM DIMM is 2, set it at 2 to enhance your system performance. If the CAS latency of your SDRAM DIMM is 3, stay with the default setting, 3.
The options are: Auto (Default), 3, 2.

DRAM Clock

The feature allows users to select the DRAM clock.
The options are: Auto (Default), HCLK-33M, HCLK+33M.

Memory Hole

When you install a Legacy ISA card, this feature allows you to select the memory hole's address range of the ISA cycle when the processor accesses the selected address area. Please read your card manual for detail information. When disabled, the memory hole at the 14MB (or 15MB) address will be treated as a DRAM cycle when the processor accesses the 14~16MB (or 15~16MB) address area.
The options are: 15M - 16M, Disabled (Default).

P2C/C2P Concurrency

This feature allows users to set PCI/AGP Master-to-CPU/ CPU-to-PCI/ AGP Slave concurrent.
The options are: Enabled (Default), Disabled.

Fast R-W Turnaround

It allows users to set DRAM fast read-to-write turn around.
The options are: Enabled, Disabled (Default).

System BIOS Cacheable

When enabled, allows the ROM area F000H-FFFFH to be cacheable when cache controller is activated. The options are: Enabled (Default), Disabled.

Video RAM Cacheable

When enabled, allows the system to use the video RAM from cache RAM, instead of the slower DRAMs or ROMs.
The options are: Enabled, Disabled (Default).

AGP Aperture Size

It allows you to select the main memory frame size for AGP use.
The options are 4, 8, 16, 32, 64 (Default), 128MB.

AGP-4X Mode

This feature allows user to select the AGP mode be to 2x or 4x when an AGP add-in card installed. However, when set at Enabled and the AGP card only support 1x mode, the system will fall back 1x mode automatically.
The options are: Enabled (Default), Disabled.

AGP Fast Write

When enabled, this feature allows you to set AGP fast write made.
The options are: Enabled, Disabled (Default).

OnChip USB

When enabled, this feature allows you to use the onboard USB feature.
The options are: Enabled (Default), Disabled.

USB Keyboard Support

This feature will appear only if the above item Onchip USB is set at Enabled. Set this feature to Enabled to use a USB keyboard with your system.
The options are: Disabled (Default), Enabled.

Auto Detect DIMM/PCI Clk

Set this field at Enabled to allow auto detection of DIMM and PCI. If none detected, it will stop the clock of each DIMM and PCI.
The options are: Enabled (Default), Disabled.

Spread Spectrum

This feature is used to set the spread Spectrum to be center spread type or down spread type. The options are: Enabled (Default), Disabled.

CPU Host/PCI Clock (MHz)

Select *Default* or select a timing combination for the CPU and the PCI bus. When set to *Default*, BIOS uses the actual CPU and PCI bus clock values. The options are: Default (Default), 66.8/33.4 MHz, 75/37.5 MHz, 83.3/41.7 MHz, 90/30 MHz, 100/33.3 MHz, 105/35 MHz, 110/36.7 MHz, 112/37.3 MHz, 115/38.3 MHz, 120/40 MHz, 124/41.3 MHz, 124/31 MHz, 133/33.3MHz, 140/35 MHz, 150/37.5 MHz.

CPU Warning Temperature

This feature allows you to set the temperature to slow down the CPU clock frequency.

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

Current System Temp. / Current CPU Temperature / Current CPUFAN Speed / Current CHAFAN1/2 Speed / Current PWRFAN Speed / IN0(V): to IN2(V): / +5V: / +12V: / –12V: / –5V: / VBAT(V): / 5VSB(V):

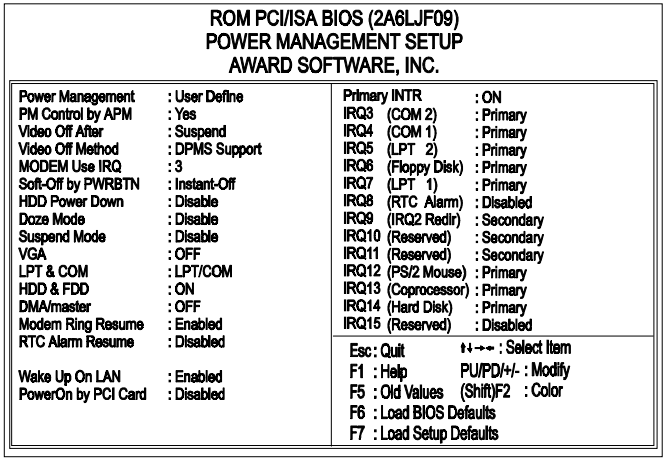
These items allow end users and technicians to monitor data provided by the BIOS on this mainboard. It is not user-configurable.

Shutdown Temperature

When Windows 98 ACPI mode installed, this feature helps to shutdown the system when the system temperature is as high as the selected temperature to prevent from the overheat problem.

The options are: 60°c/140°F, 65°c/149°F, 70°c/158°F (Default), 75°c/167°F.

Power Management Setup



ROM PCI/ISA BIOS (2A6LJF09)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: User Define	Primary INTR	: ON
PM Control by APM	: Yes	IRQ3 (COM 2)	: Primary
Video Off After	: Suspend	IRQ4 (COM 1)	: Primary
Video Off Method	: DPMS Support	IRQ5 (LPT 2)	: Primary
MODEM Use IRQ	: 3	IRQ6 (Floppy Disk)	: Primary
Soft-Off by PWRBTN	: Instant-Off	IRQ7 (LPT 1)	: Primary
HDD Power Down	: Disable	IRQ8 (RTC Alarm)	: Disabled
Doze Mode	: Disable	IRQ9 (IRQ2 Redir)	: Secondary
Suspend Mode	: Disable	IRQ10 (Reserved)	: Secondary
VGA	: OFF	IRQ11 (Reserved)	: Secondary
LPT & COM	: LPT/COM	IRQ12 (PS/2 Mouse)	: Primary
HDD & FDD	: ON	IRQ13 (Coprocessor)	: Primary
DMA/master	: OFF	IRQ14 (Hard Disk)	: Primary
Modem Ring Resume	: Enabled	IRQ15 (Reserved)	: Disabled
RTC Alarm Resume	: Disabled		
Wake Up On LAN	: Enabled	Esc : Quit	↑↓→← : Select Item
PowerOn by PCI Card	: Disabled	F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift)F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Power Management

This item allows you to adjust the power management features. Select Disable for disabling global power management features. Select User Define for configuring your own power management features. Min Saving initiates all predefined timers in their minimum values. Max Saving, on the other hand, initiates maximum values. The options are: User Define (Default), Min Saving, Max Saving.

PM Control by APM

The option No allows the APM (Advanced Power Management) specification be ignored. Selecting Yes will allow the BIOS wait for APM's prompt before it enters Doze mode, Standby mode, or Suspend mode. If the APM is installed, it will prompt the BIOS to set the system into power saving mode when all tasks are done. The options are: No, Yes (Default).

Video Off After

It allows you to activate the video off feature for the display monitor power management. The options are Suspend (Default), Doze, NA.

Video Off Method

The option *V/H SYNC+Blank* allows the BIOS to blank off screen display by turning off the V-Sync and H-Sync signals sent from add-on VGA card. *DPMS Support* allows the BIOS to blank off screen display by your add-on VGA card which supports DPMS (Display Power Management Signaling function). *Blank Screen* allows the BIOS to blank off screen display by turning off the red-green-blue signals.
The options are: V/H SYNC+Blank, DPMS Support (Default), Blank Screen.

MODEM Use IRQ

The feature allows users to select the IRQ# of the system that is the same IRQ# as the modem use. The settings are: NA, 3 (Default), 4, 5, 7, 9, 10, 11.

Soft-Off by PWR-BTTN

The selection Delay 4 Sec. will allow the system shut down after 4 seconds after the power button is pressed. The selection Instant-Off will allow the system shut down immediately once the power button is pressed.
The settings are: Delay 4 Sec, Instant-Off (Default).

HDD Power Down

The option lets the BIOS turn the HDD motor off when system is in Suspend mode. Selecting 1 Min..15 Min allows you define the HDD idle time before the HDD enters the Power Saving Mode.
The options 1 Min..15 Min will not work concurrently. When HDD is in the Power Saving Mode, any access to the HDD will wake the HDD up.
The options are: Disable (Default), 1 Min..15 Min.

Doze Mode

When disabled, the system will not enter Doze mode. The specified time option defines the idle time the system takes before it enters Doze mode.
The options are: Disable (Default), 10, 20, 30, 40 Sec, 1, 2, 4, 6, 8, 10, 20, 30, 40 Min, 1 Hour.

Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode. The options are: Disable (Default), 10, 20, 30, 40 Sec, 1, 2, 4, 6, 8, 10, 20, 30, 40 Min, 1 Hour.

VGA

ON enables the power management timers when a no activity events is detected in the VGA. *OFF* disables the PM timer even if a no activity event is detected. The options are: OFF (Default), ON.

LPT & COM

LPT/COM enables the power management timers when a no activity event is detected in the LPT and COM ports. *LPT (COM)* enables the power management timers when a no activity event is detected in the LPT (COM) ports. *NONE* to disable the PM timer even if a no activity event is detected. The options are: LPT/COM (Default), LPT, COM, NONE.

HDD & FDD

ON will enable the power management timers when no activity event is detected in the hard drive and floppy drive. *OFF* disables the PM timer even if no activity event is detected. The options are: OFF, ON (Default).

DMA/master

To set this feature at ON activates that Power Management feautre (PM) wake-up event for the DMA or bus master (of the LAN card or/and SCSI card). The options are: OFF (Default), ON.

Modem Ring Resume

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

RTC Alarm Resume

Enabled allows you to set the time the system will be turned on from the system power-off status. The options are: Enabled, Disabled (Default).

Date (of Month)

This feature allows you to set the day of the alarm starts when the RTC Alarm Resume From Soft Off is set to be Enabled. The options are: 0, 1..31.

Timer (hh:mm:ss)

If an ATX power supply is installed and when RTC Alarm Resume is Enabled, this feature allows you to set the time of the alarm starts when the RTC Alarm Resume From Soft Off is set to be Enabled.
The options are: 7: 0: 0 (Default). hh (*hour*) - 0, 1, 2,.., 23; mm (*minute*) - 0, 1, 2,..,59; ss (*second*) - 0, 1, 2,..,59.

Wake Up On LAN

When set at Enabled, an input signal comes from the other client/server on the LAN awakes the system from a soft off state if connected over LAN. The options are Disabled (Default) or Enabled.

PowerOn by PCI Card

When set at Enabled, any PCI-PM event awakes the system from a PCI-PM controlled state.
The options are Disabled (Default) or Enabled.

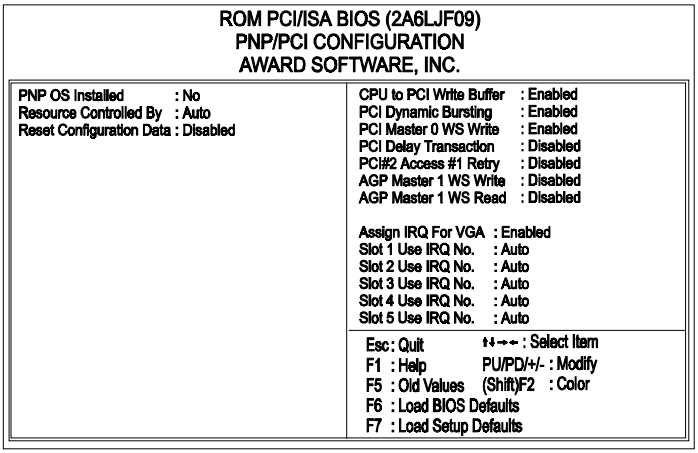
Primary INTR

Whe the Primary interrupt (the Primary option in the featuer of IRQ# Activity) generates will make the Power Management feautre (PM) wake-up event on. If set at OFF, all the primary interrupt will not wake-up the systetm.
The options are: OFF, ON (Default).

IRQ# Activity

After the time period which you set at in Suspend Mode Feature, the system advances from Doze Mode to Suspend Mode in which the CPU clock stops and the screen display is off. At this moment, if the IRQ activity which is defined as Primary occurs, the system goes back to Full-on Mode directly.
If the IRQ activity which is defined as Secondary takes place, the system enters another low power state, Dream Mode, in which the system will act as Full-on Mode except that the screen display remains off until the corresponding IRQ handler finishes, then back to Suspend Mode.
The options of IRQ 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 are: Primary, Second ary, Disabled.
The default values of IRQ 8, 15 are: Disabled.
The default value of IRQ 3, 4, 5, 6, 7, 12, 13, 14 are: Primary.
The default value of IRQ 9, 10, 11 are: Secondary.

PNP/PCI Configuration



PNP OS Installed

If your operating system is a Plug-and-Play one, such as Windows NT, Windows 95, select Yes. The options are: No (Default), Yes.

Resources Controlled By

If set at Auto, the BIOS arranges all system resources. If there exists conflict, select Manual. The options are: Auto (Default), Manual.

The manual options of **IRQ- / DMA- assigned to** are: Legacy ISA, PCI/ISA PnP (Default).

Reset Configuration Data

When enabled, allows the system to clear the last BIOS configuration data and reset with the default data.

The options are: Enabled, Disabled (Default).

CPU to PCI Write Buffer

When enabled, allows data and address access to the internal buffer of the system controller; so the processor can be released from the waiting state. The options are: Enabled (Default), Disabled.

PCI Dynamic Bursting

When enabled, the PCI controller allows Bursting PCI transfer if the consecutive PCI cycles come with the address falling in same 1KB space. This improves the PCI bus throughput.
The options are: Enabled (Default), Disabled.

PCI Master 0 WS Write

When enabled, allows a zero-wait-state-cycle delay when the PCI master drive writes data to DRAM. The options are: Enabled (Default), Disabled.

PCI Delay Transaction

Enable this feature to abort the current CPI master cycle and to accept the new PCI master request, it reaccepts the original PCI master and returns the PCI data phase to the original PCI master.
The options are: Disabled (Default), Enabled.

PCI#2 Access #1 Retry

When enabled, the AGP (PCI#2) access to PCI (PCI#1) will be retried until the maximum count. The options are: Disabled (Default); Enabled.

AGP Master 1 WS Write

When enabled, the AGP bus master write access to DRAMs will add one wait-state cycle. The options are: Enabled (Default); Disabled.

AGP Master 1 WS Read

When enabled, the AGP bus master read access to the DRAMs will add one wait-state cycle. The options are: Disabled (Default); Enabled.

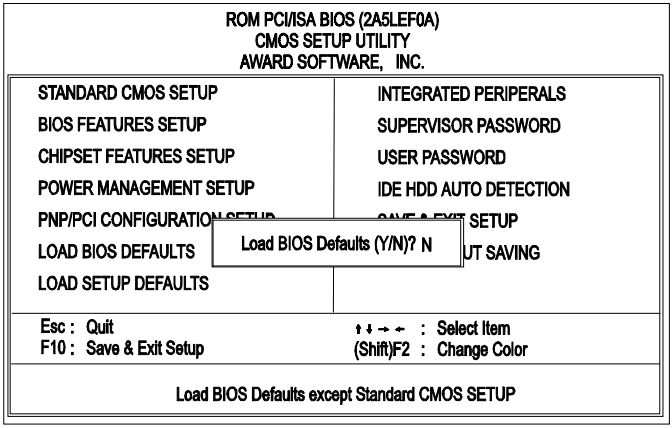
Assign IRQ For VGA

If your PCI VGA card does not need an IRQ, select Disabled; therefore, an IRQ can be released for the system use.
The options are: Enabled (Default), Disabled.

Slot 1/2/3/4/5 Use IRQ No.

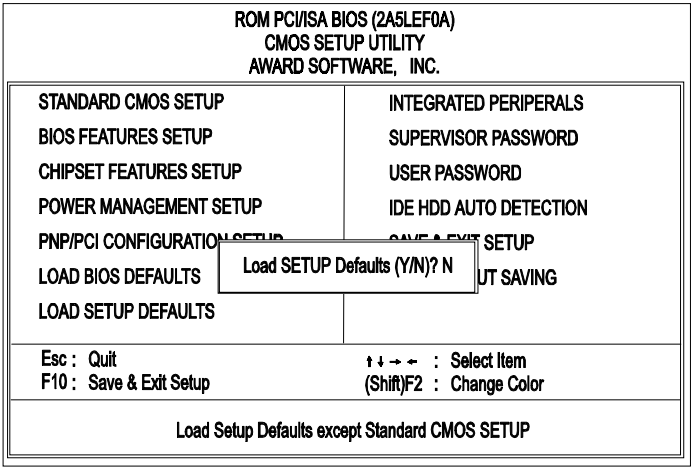
Some PCI devices would need to use an IRQ on the PCI bus. Selecting Auto allows the PCI controller to automatically allocate an IRQ.
The options are: Auto (Default); 3, 4, 5; 7; 9, 10, 11, 12; 14; 15.

Load BIOS Defaults



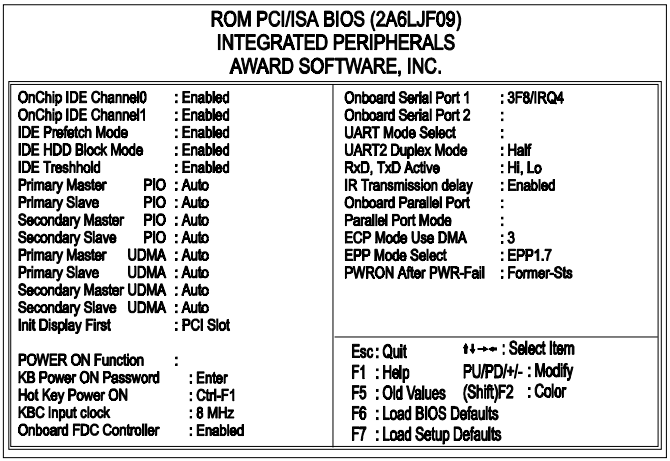
BIOS defaults contain the most appropriate values of the system parameters that allow minimum system performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burns into the ROM.

Load Setup Defaults



Selecting *this* field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

Integrated Peripherals



OnChip IDE Channel0

When enabled, allows you to use the onboard primary PCI IDE. If a hard disk controller card is used, set at Disabled.
The options are: Enabled (Default), Disabled.

OnChip IDE Channel1

When enabled, allows you to use the onboard secondary PCI IDE. If a hard disk controller card is used, set at Disabled.
The options are: Enabled (Default), Disabled.

IDE Prefetch Mode

When set at Enabled, it allows data to be posted to and prefetched from the primary IDE data ports. Data prefetching is initiated when a data port read occurs. The read prefetch eliments latency to the IDE data ports and allows them to be performed back to back for the highest possible PIO data transfer rates. The first data prot read of a sector is called the demand read. Subsequent data port reads from the sector are called prefetch reads. The demand read and all prefetch reads must be of the same size (16 or 32 bits).
The options are: Enabled (Default), Disabled.

IDE HDD Block Mode

When enabled, the system executes read/write requests to hard disk in block mode. The options are: Enabled (Default), Disabled.

IDE Treshhold

When disabled, the IDE data transfer starts immediately if FIFO is not empty.
The options are: Enabled (Default), Disabled.

Primary Master PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard disk (master) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary Slave PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard disk (slave) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Secondary Master PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard disk (master) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Secondary Slave PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard disk (slave) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary Master UDMA

Allows you to select the first PCI IDE channel of the first master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disable.

IDE Primary Slave UDMA

Allows you to select the first PCI IDE channel of the first slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disable.

IDE Secondary Master UDMA

Allows you to select the second PCI IDE channel of the secondary master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disable.

IDE Secondary Slave UDMA

Allows you to select the second PCI IDE channel of the secondary slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disable.

Init Display First

When you install an AGP VGA card and a PCI VGA card on the board, this feature allows you to select the first initiation of the monitor display from which card. The options are: PCI Slot (Default), AGP.

POWER ON Function

Allows you to set the method for powering-on the system. The default option of *BUTTON-ONLY* allows system power-on using the standard system case mounted ON/OFF switch. The option *Password* allows you to set up to 5 alphanumeric characters to power-on the system. The option *Hot KEY* allows you to set which of the 12 keyboard function keys (**F1** to **F12**) in combination with the **Ctrl** key to power-on the system. The option *Mouse Click* allows you to use the PS/2 mouse to power-on the system by double-clicking on the mouse button. The options are: Button Only (Default); Password; Hot KEY; Mouse Right, Mouse Left.

NOTE: When using Password, Hot KEY, or Mouse Click options for the item POWER ON Function will render the power button on the system case ineffective. In case user forgets password or hot key setting, use the clear password switch or jumper to clear RTC data (refer to section about clear password on Chapter 2). Another method is to unplug system power from the AC power outlet and then re-insert the power cord. Previous password and hot key settings will be disabled allowing user to set a new one.

KB Power ON Password

Allows you to set up to 5 alphanumeric characters use in powering-on the system. To set password, set the above item POWER ON Function to *Password*, then using the keyboard's down arrow key to move cursor to this item KB Power ON Password and press the <**Enter**> key. A box will appear asking you to input the password desired to power-on the system.

Hot Key power ON

Allows you to set which of the 12 keyboard function keys (**F1** to **F12**) in combination with the **Ctrl** key will be used to power-on the system. The options are: *Ctrl-F1* (default) up to *Ctrl-F12*.

KBC input clock

This feature allows you to select different KBC input clocks which your keyboard actually supported. Please read your keyboard manual also for more information. The options are: 6, 8 (Default), 12, 16 MHz.

Onboard FDC Controller

When enabled, the floppy diskette drive (FDD) controller is activated. The options are: Enabled (Default), Disabled.

Onboard Serial Port 1

If the serial port 1 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed. The options are: 3F8/IRQ4 (Default), 3E8/IRQ4, 2F8/IRQ3, 2E8/IRQ3, Disabled.

Onboard Serial Port 2

If the serial port 2 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed. The options are: 2F8/IRQ3 (Default), 3E8/IRQ4, 2E8/IRQ3, 3F8/IRQ4, Disabled.

UART Mode Select

Allows you to select the IR modes if the serial port 2 is used as an IR port. Set at Standard, if you use COM2 as the serial port as the serial port, instead as an IR port. The options are: HPSIR, ASKIR, Normal (Default).

UART2 Duplex Mode

Allows you to select the IR modes.
The options are: Half (Default), Full.

RxD , TxD Active

This feature is available only if the item, UART 2 Mode, is set at ASKIR or HPSIR. The feature allows you to select the active signals of the reception end and the transmission end. This is for technician use only.
The options are: Hi, Lo (Default); Hi, Hi; Lo, Hi; Lo, Lo.

IR Transmission Delay

When Enabled, the transmission delays 4 characters-time (40 bit-time) if SIR is changed from RX mode to TX mode. When Disabled, no transmission delay if SIR is changed from RX mode to TX mode.
The options are: Enabled (Default), Disabled.

Onboard Parallel Port

Allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.
The options are: 378/IRQ7 (Default), 278/IRQ5, 3BC/IRQ7, Disabled.

Parallel Port Mode

Allows you to connect with an advanced printer via the port mode it supports.
The options are: SPP (Default), EPP, ECP, ECP+EPP.

ECP Mode Use DMA

This feature allows you to select Direct Memory Access (DMA) channel if the ECP mode selected.The options are: 3 (Default), 1.

EPP Mode Select

This feature allows you to select the EPP type version.
The options are: EPP1.7 (Default), EPP1.9.

PWRON After PWR-Fail

When the system is shut down owing to the power failure, the system will not be back to power on by itself. This feature allows you to set the system back to which power status of the system when the system power is resumed. The options are Former-Sts (Default), On, or Off.

Supervisor/User Password

To enable the Supervisor/User passwords, select the item from the Standard CMOS Setup. You will be prompted to create your own password. Type your password up to eight characters and press Enter. You will be asked to confirm the password. Type the password again and press Enter. To disable password, press Enter twice when you are prompted to enter a password. A message appears, confirming the password is disabled.

Under the BIOS Feature Setup, if *Setup* is selected under the Security Option field and the Supervisor/User Password is enabled, you will be prompted password every time you try to enter the CMOS Setup Utility. If *System* is selected and the Supervisor/User Password is enabled, you will be requested to enter the Password every time when you reboot the system or enter the CMOS Setup utility.

IDE HDD Auto Detection

The IDE Hard Disk Drive Auto Detection feature automatically configures your new hard disk. Use it for a quick configuration of new hard drives. This feature allows you to set the parameters of up to four IDE HDDs. The option with **(Y)** are recommended by the system BIOS. You may also keys in your own parameters instead of setting by the system BIOS. After all settings, press Esc key to return the main menu. For confirmation, enter the Standard CMOS Setup feature.

Save and Exit Setup

After you have made changes under Setup, press Esc to return to the main menu. Move cursor to Save and Exit Setup or press F10 and then press Y to change the CMOS Setup. If you did not change anything, press Esc again or move cursor to Exit Without Saving and press Y to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility: **SAVE to CMOS and EXIT (Y/N)?**

Exit without Saving

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications: **Quit Without Saving (Y/N)?**

FAQs

General FAQs

How do I know my BIOS version?

Spot it on the boot screen, click [Pause/Break] button to write it down.

Can I use ECC memory?

Yes, provided your chipset supports it. Check your manual (Overview section) or consult the chipset manufacturer's Web site (Intel or VIA).

How do I know which FLASH chip I have?

Partially remove the sticker from the chip and see the name of the manufacturer. Usually the jumper setting is set correctly in the factory.

How can I get the USB drivers?

Download Microsoft USB Supplement and a set of generic USB Drivers from Drivers and Utilities Page. You must have Windows 950B (Service Release II, "Windows97") to install these.These drivers resolve the yellow exclamation mark problem (Unknown Devices, USB) in Device Manager. It is recommended to install Windows 98/98 SE; because that it provides built-in USB drivers.

Where can I get the drivers for PCI set motherboards?

To download drivers you need, visit the chipset vendor' s website Drivers and Utilities Page. There you will see links to FAQs and other Web sites that explain in detail how to install the drivers.

What the DMI utility is used for?

DMI Configuration Utility can be used to maintain the Management information Format database (MIFD). DMI is also able to auto-detect and record information pertinent to a computers system such as the CPU type, CPU speed and internal/external frequencies and memory size.

The onboard BIOS detects as much system information as possible and stores it in a 4KB Block in the motherboards Flash EPROM and allows the DMI to retrieve data from this database. The DMI utility also allows the system integrator or end user to add additional information into the MIFD such as serial numbers, housing configuration and vendor information. Those information cannot be detected by the motherboards BIOS and has to manually entered through the DMI Configuration utility and updated into the MIFD.

NOTE: The DMI utility is included in the subdirectory **\utility** of the CD-Pro.

How do I use DMI Utility?

Very carefully, because otherwise your system can become totally unusable after altering and saving some configuration on DMI. DMI Utility should not be run from Windows or DOS version higher than v6.22.

If you accidentally alter some settings using DMI Utility under Windows95 (or MS-DOS that comes with it), flash the system BIOS immediately, do not reboot. In some cases, using Win95 as operating system (for applying DMI Utility) shows insufficient error message while trying to load the Flash utility, that's why we recommend to use DOS 6.22. In that case, the other option is to use the Boot Block feature on the BIOS. Use an ISA VGA card for the system to allow them to boot at least on drive "A" (using DOS 6.22 of course) so you will be able to flash the BIOS at least. If you use DMI from Windows95 DOS prompt or Restart in MS-DOS mode, you will not be able to restart the PC.

BIOS FAQs

How do I flash a new BIOS?

The mainboard package provides BIOS flash software tool in the software utility CD-ROM. This software feature is provided for upgrading BIOS use. Play the CD-ROM, click on *Browse CD*, select *Flash*, then choose the BIOS vendor that provided the BIOS this board came with. Please print the relating README file and read it first. For more information about, please visit FIC Online at www.fic.com.tw.

Downloading BIOS File

Format a bootable system diskette, visit the FIC website at **www.fic.com.tw**. Click *BIOS/Drivers Update* item under **BIOS** group, then select the BIOS file you need. Download it to your bootable diskette.

Upgrading BIOS File

Place the bootable diskette containing the BIOS file in the diskette drive (Assume the diskette drive is A.), and reboot the system by A drive. At the A: > prompt, execute the BIOS upgrading procedure by entering the Flash BIOS utility and the BIOS file with its extension.

Command: {flash tool file}{space}{downloaded BIOS file} <Enter>
The other parameters are listed in the relating README file, please read it if need.

After press *Enter* key, type Y to the message **Press "Y" to Continue, "N" to Reboot**. Press *Enter* key. When the message **Press Any Key to Reboot**, the procedure is completed. Press any key to reboot.

What is "Hardware-based intelligent virus protection"?

This is a new BIOS feature based on anti-virus (AV) softwere that protects the system from boot-time viruses. It is intellgent in the sense that it uses rules modeled after virii's behavior. For example, it can tell the difference between normal writing to HDD boot sector and virus-attempted writing. It unloads after boot-up so it does not provide total protection and is not intended to serve as replacement for regular anti-virus software.

This utility includes only Scan funcition and not Virus Delete function. It is not necessary to "update" virus definition files because there are none.

When I try to flash BIOS I get an error message saying about a wrong part number. Why?

Flash EPROM ("BIOS") chips used on FIC motherboards vary (Intel, AMD, Fujitsu, etc.). As far as this problem is concerned, there are two possible reasons:

a) you may have used a wrong BIOS or flash utility. Verify that both the BIOS file and the flash utility are the right versions.

b) the flash utility you used did not recognize the type of flash EPROM installed on your motherboard. Verify that you have the right files and if you're sure in that, ignore the warning.

I updated my BIOS and am not very much pleased with the result (slower performance, new bugs, etc.). What now?

Restore the old BIOS or wait until a newer BIOS is available. You should use the flash utility supplied with the old BIOS and NOT the flash utility you got with the new BIOS. If you do not know what flash utility it was, consult the Web support pages or contact technical support.

Why not update BIOS?

In 90% of cases, a BIOS update is released to address a problem with a particular piece of hardware or software.Therefore, the new BIOS gives the system some new (different) parameters to work with. Newer BIOS'es contain all fixes from previous versions. If the fix list of a new BIOS does NOT address any of problems that you may have, it is unreasonable to update BIOS only for sake of it, because you may be using a combination of hardware/software that is incompatible and yet-untested with the BIOS version you're upgrading to.

It is recommended to refrain from updating BIOS without a good reason. If you don't see your problem listed in the fix list, do not update BIOS - better go to a shareware Web site (winfiles.com, shareware.com, tucows.com) and update your software or do something les dangerous.

And finally, some 10% of BIOS updates contain new CPU ID strings and code enhancements (ACPI, etc.). For those an update is recommended only when it is necessary (i.e. the processor ID does not display properly, the system must have ACPI, etc.).

A typical situation occurs when a user wants to update BIOS because the new version supports a CPU he/she "plans" to buy sometime in the future. With some bad luck, the user ends up with a wrong BIOS (wrong PCB, or chipset, or I/O or all of them) and a fried BIOS.

Windows 98/98 SE FAQs

What's the proper install prcedure for VIA-based motherboards?

There are four steps:

1) Go to BIOS Setup and enable USB
2) Install Win98/98 SE on your system
3) Install the patch files and other drivers that contained in the CD-Pro
4) Install your add-on card drivers

NOTE: If your visual performance became unstable after the above installation completed (especially a VGA card driver was installed in Step 4). Please execute Step 3 once again. It should solve the problem. This can be done because, most probably, that the driver version of the add-on card is earlier than that of the patch files and drivers contained in the CD-Pro.

Windows 95 FAQs

What is the proper install order of graphics-related VIA drivers?

1)Install Windows, 2) If your motherboard has an AGP port, load Vxd driver v. 2.9. 4) Load display card driver.

Why does my VIA chipset-based system crash when the system attempts to access UDMA HDD?

This problem appears under Windows 95 OSR2 and OSR 2.1. Microsoft made two updated versions of drivers that cause the problem. Please download them at
http://support.microsoft.com/support/kb/articles/q171/3/53.asp

How can I know if a software (example: WindowsNT) is compatible with FIC motherboards?

Each FIC motherboard is tested with a variety of operating systems and applications. Compatibility reports are published every time new model or updated model of a motherboard is released.Compatibility reports can be downloaded from individual motherboard support pages or from the FIC FTP Server (opens in a new window).

Windows95 shows an exclamation mark next to USB device on my motherboard. Is there any driver that canhelp me?

The only reason why you can see that Exclamation mark on USB serial Bus & PCI Bridge is that Windows95 didn't support it. You will need to install its drivers to fix it.