Declaration of Conformity

According to 47 CFR, Parts 2 and 15 of the FCC Rules

The following designated product:

EQUIPMENT: MAINBOARD
MODEL NO.: 6VIA6

is a Class B digital device that complies with 47 CFR Parts 2 and 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This declaration is given to the manufacturer:

CHAINTECH - EXCEL COMPUTER U.S., INC.
4427 Enterprise ST. Fremont, CA 94538, U.S.A.
hattp://www.chaintech-excel.com

Chaintech President: Simon Ho

Signature: 

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference
- This device must accept any interference received, including interference that may cause undesired operation.

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for audio noise emissions from digital apparatuses set out in the Radio Interference Regulations of the Canadian Department of Communications.

Manufacturer's Disclaimer Statement

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Table of Contents

Chapter 1

Introduction

1-1 Product Specifications

❒ **Processor**
- Supports Intel Socket370 Coppermine and Celeron (FC PGA) processors
- System clock 66/100/133MHz

❒ **Chipset**
- VIA 694X/686A or 686B dual chip AGPset

❒ **DRAM Memory**
- Two 168-pin DIMM sockets support up to 1GB for SDRAM
- Supports PC-100/PC-133 SDRAM
- Supports Sync. & Asyn. Host memory clock scheme

❒ **Expansion Slots**
- One Universal-AGP slot for both 2X/4XAGP at 3.3v or 1.5v (v2.0 compliant)
- Three 32-bit PCI slots (Rev 2.2 compliant)
- One CNR slot (optional)
- One PCI riser connector for low profile PC designs (optional)

❒ **Boot-Block Flash ROM**
- Award System BIOS, supports PnP, APM, DMI, **ACPI** & Multi-device booting features i.e. floppy, LS120, CD/DVD-ROM, HDD(IDE, SCSI), ZIP-ATAPI etc.
- **BIOS Wonder** technology including ChipAway Virus, Flash BIOS Write Protect, Embedded Flash Utility.

❒ **Embedded Ultra DMA-66/100 PCI IDE controller**
- Supports two IDE ports up to 4 ATAPI devices
- Supports up to PIO Mode 4 up to 16.6MBps and Multi Mode 4 up to 66MBps with bus mastering
- Bus Mastering software drivers for common multi-task operating systems
- Optional VIA 686B chip support ATA-100 Multi Word Mode 5up to 100MBps

❒ **Onboard Ultra I/O**
- Three UARTs support two serial ports and IR function for HPSIR and ASKIR
- One parallel supports SPP/ECP/EPP
- One floppy disk drive connector supports up to 2.88MB, Japanese 3-Mode, and 1Mbps transfer rates
- Supports Game/MIDI port for soft-audio

❒ **Double Stack Back-Panel I/O Connectors**
- PC99 Compliant color connectors
- PS/2 Mini-DIN keyboard and mouse port
- Two USB ports
- Two 9-pin D-Sub male Serial port
- One 25-pin D-Sub female Printer port
- Audio Line-in/out and Mic-in jacks
- One 15-pin D-Sub female Game/MIDI port

❒ **PCI Audio Subsystem**
- CMedia 8738 audio chip w/ legacy audio SB16/Pro compatible
- Advanced 64-Voice Wavetable synthesizer
- Full-duplex operation for simultaneous recording and playback
- Supports HRTF 3D positional audio with MSDS, DS3D, DirectMusic, Aureal A3D and Creative EAX (Environment Audio Extensions) APIs
- 6-Channel speaker audio support is easy to build up a Home Theater environment

❒ **Embedded System Monitor Hardware**
- 5 external voltage inputs
- 2 temperature sensor with thermistor for CPU and System
- 2 Fan speed (CPU and System) monitoring with ON/OFF control in suspend

❒ **Embedded USB Controller**
- Four USB ports (UHCI v1.0 compliant)
- Optional USB riser with additional 2 USB ports

❒ **Board Dimensions**
- Micro-ATX form factor, 244mm x 194mm, 4 Layers

❒ Advanced Management Features
- Embedded System Monitoring Hardware
- Poly-fuse protection for USB and keyboard circuitry
- Embedded BIOS flash utility
- Complete Data Security:
  * ***Flash BIOS write protection*** against unauthorized access
  * ***Trend ChipAway Virus***, to ensure virus-free booting procedure
- **Advanced Management Features**
  * Power-on events: WOL(Wake-on-LAN) network card, Modem ring, RTC Alarm
  * Software power-off control for Win9x
  * Over-ride power button
  * Power-failure recovery
  * Blinking Power-LED in suspend
  * Hardware Reset Protect

1-2 Package Contents

This product comes with the following components:

- ❒ One mainboard
- ❒ One 40-pin (80-wire) UDMA-66/100 IDE connector ribbon cable (Figure 1-1)

  *** Color coded connection for UDMA 66/100 cable**

  Blue to mainboard, Gray to Master and Black to slave
- ❒ One 34-pin floppy disk drive ribbon cable (Figure 1-2)
- ❒ Optional USB adaptor (Figure 1-3)
- ❒ One User's Manual
- ❒ One CD-ROM that includes
  - Acrobat Reader
  - Award Flash Utility
  - Award DMI Utility for DOS
  - VIA audio driver for DOS/Win95/98/NT
  - VIA Service Pack for Win9x/WinNT including Bus Master IDE drivers, AGP VxD and etc.
  - Optional **Value Pack 2001** software group including Norton AntiVirus, AutoSave, ADOBE ActiveShare, Acrobat Reader, Imagemore, X-stop, Appio and Ewalla.

✎ See the Readme.txt file in the CD-ROM's root directory for installation instructions of all driver and software utilities.

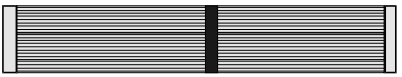


Figure 1-1 UDMA 66/100 IDE cable

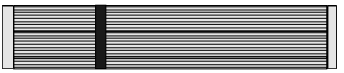


Figure 1-2 Standard Floppy cable

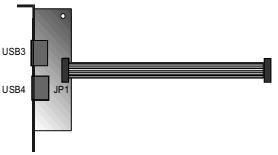
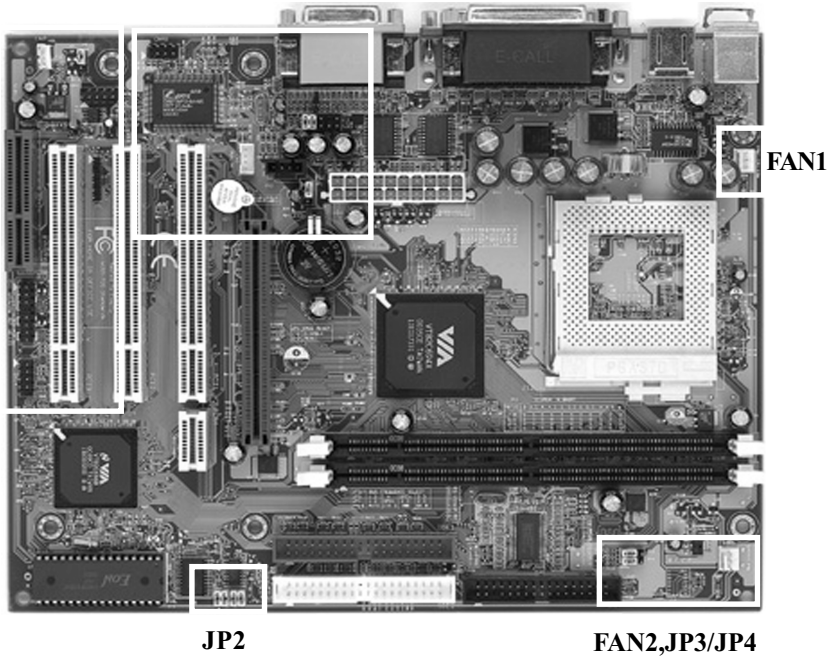
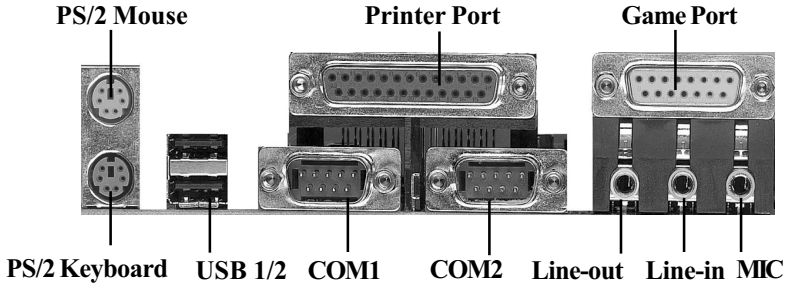


Figure 1-1 Optional USB Adaptor

1-3 Mainboard Layout





1-4 Connector and Jumper Reference Chart

Jumper & Connector No.	Function	Page
JP1	Clear CMOS Data Jumper	9
JP2	CPU Frequency Ratio	9
JP3/JP4	External Clock Frequency Jumper	9
JP5	Onboard Audio	9
CN1	Over ride Power Button Connector	8
	Power Indicator LED Connector	8
	Green LED Connector	8
	System Reset Switch Connector	8
	Speaker Connector	8
	IDE Activity LED Connector	8
CN2	CD-ROM Audio in Connector	9
CN3	Auxiliary CD-ROM Audio-in Connector	10
CN4A	Front Panel Audio Connector	10
CN4B	AC3 Surround/Center+Bass Connector	10
CN6	WOL (Wake-on-LAN) Connector	10
USB1/CN14	USB Ports and USB 3/4 Connector	11
IR1	Infrared Connector	11
PW1	ATX Power Supply Connector	7
FAN1/FAN2	CPU/System Cooling Fan Connector	11

Chapter 2

Hardware Setup

If your mainboard has already been installed in your computer you may still need to refer to this chapter if you plan to upgrade your system's hardware.

Be sure to disconnect the power cable from the power source before performing any work on your mainboard, i. e. installing a CPU, memory module, changing a jumper setting, etc. Not doing so may result in electrical shock!

2-1 Installing a CPU in a Socket 370

The Intel Socket 370, designed for the Celeron/Coppermine processor, has been incorporated as a standard mainboard specification To insert your CPU into Socket 370 please do the following:

1. Locate a small dot marked on the top surface of the CPU close to one if it's corners. The same corner will also be cut off, leaving a noticeable notch in the CPU's corner. These markings indicate Pin 1 of the CPU.
2. Pull up the lever of Socket 370 so that it is perpendicular with the surface of the mainboard. Gently insert the CPU with Pin 1 at the same corner of Socket 370 that contains the end of the lever. Allow the weight of the CPU to push itself into place. Do not apply extra pressure as doing so may result in damaging your CPU. Snap the lever back into place.

Installing a heat sink with cooling fan is necessary for proper heat dissipation from your CPU. Failing to install these items may result in overheating and possible burn-out of your CPU.

2-2 Setting Your CPU's Parameter

Frequency Configuration

If you install a CPU on this mainboard, you must set CPU Frequency Ratio(JP2) and JP3/JP4 for External Clock Frequency.

*** CPU Speed = Frequency ratio x External clock (System) Frequency**

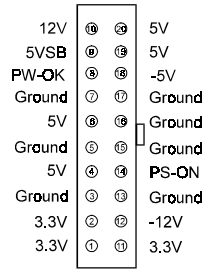
You do not need to make voltage settings because SeePU automatically sets your CPU voltage.

2-3 Connector and Jumper Settings

Connectors are used to link the system board with other parts of the system, including the power supply, the keyboard, and the various controllers on the front panel of the system case.

The power supply connector is the last connection to be made while installing a mainboard. Before connecting the power supply, please make sure it is not connected to the power source.

ATX Power Supply Connector (PW1)



The power cord leading from the system's power supply to the external power source must be the very last part connected when assembling a system.

The ATX power supply provides a single 20-pin connector interface which incorporates standard +/-5V, +/-12V, optional 3.3V and Soft-power signals. The Soft-power signal, a 5V trickle supply is continuously supplied when AC power is available. When the system is in the Soft-Off mode, this trickle supply maintains the system in it's minimum power state.

Software Power-Off Control

This mainboard can be powered down using theWindows 95 Software Power-Off function. To power down your computer, click the START button on the Windows 95 task bar. Select "Shut Down The Computer" and the system turns off. The message "It is now safe to turn off your computer" will not be shown when using this function.

Power-On By Modem

While in Soft-off state, if an external modem ring-up signal occurs, the system wakes up and can be remotely accessed. You may enable this function in BIOS's Power Management Setup menu. (See section 3-5)

Blinking LED in Suspend Mode

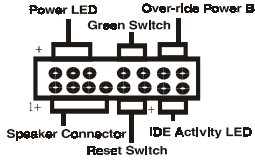
While in Suspend mode, the LED light on the front panel of your computer will flash. Suspend mode is entered by pressing the Override Power Button, pushing the Green button on your ATX case, or enabling the Power Management and Suspend Mode options in BIOS's Power Management menu. (See section 3-5)

Poly-fuse Over Current Protection

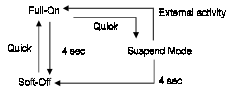
The poly-fuse protects the system from dangerous voltages the system might be exposed to via the keyboard or USB connectors. In case of such exposure, the poly-fuse will immediately be disconnected from the circuit, just like a normal fuse. After being disconnected for a certain period of time, the poly-fuse will return to its normal state, after which the keyboard or USB can function properly again. Unlike conventional fuses, the poly-fuse does not have to be replaced, relieving the user wasted time and inconvenience.

Front Panel Connector Set (CN1) A through F

A. Over-ride Power Button Connector



The power button on the ATX chassis can be used as a normal power switch as well as a device to activate Advanced Power Management Suspend mode. This mode is used for saving electricity when the computer is not in use for long periods of time. The Soft-OFF by PWR-BTTN function in BIOS's Power Management Setup menu must be set to "Delay 4 Sec." to activate this function.



Over-ride Power Button

When the Soft-OFF by PWR-BTTN function is enabled, pushing the power button rapidly will switch the system to Suspend mode. Any occurence of external activities such as pressing a key on the keyboard or moving the mouse will bring the system back to Full-On. Pushing the button while in Full-On mode for more than 4 seconds will switch the system completely off. See Over-ride Power Button Operation diagram.

B. Power Indicator LED Connector

The power indicator LED shows the system's power status. It is important to pay attention to the correct cables and pin orientation (i.e., not to reverse the order of these two connectors.)

C. Green Switch Connector

Some ATX cases provide a Green switch which is used to put the system in Suspend mode. In Suspend mode, the power supply to the system is reduced to a trickle, the CPU clock is stopped, and the CPU core is in it's minimum power state. The system is woken up whenever the keyboard or mouse is touched. The system resumes in different ways as defined by Power Management Setup screen in BIOS.

D. System Reset Switch Connector

This connector should be connected to the reset switch on the front panel of the system case. The reset switch allows you to restart the system without turning the power off.

E. Speaker Connector

This 4-pin connector connects to the case-mounted speaker

F. IDE Activity LED Connector

The IDE activity LED lights up whenever the system reads/writes to the IDE devices.

Clear CMOS Data (JP1)

Pin	Definition
1~2	Normal (default)
2~3	Clear CMOS Data

To clear the contents of the CMOS, please follow the steps below.

1. Disconnect the system power supply from the power source.
2. Set the jumper cap at location 2~3 for 5 seconds, then set it back to the default position.
3. Connect the system's power and then start the system.
4. Enter BIOS's CMOS Setup Utility and choose Load Setup Defaults. Type Y and press enter.
5. Set the system configuration in the Standard CMOS Setup menu.

Frequency Ratio Setting (JP2)

RATIO	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8
7~8	SHORT	SHORT	SHORT	SHORT	SHORT	SHORT	OPEN	OPEN	OPEN	OPEN	OPEN
5~6	SHORT	OPEN	SHORT	OPEN	SHORT	OPEN	SHORT	OPEN	SHORT	OPEN	SHORT
3~4	SHORT	SHORT	OPEN	OPEN	OPEN	OPEN	SHORT	SHORT	SHORT	SHORT	OPEN
1~2	OPEN	OPEN	SHORT	SHORT	OPEN	OPEN	SHORT	SHORT	OPEN	OPEN	SHORT

This feature allows you to set a CPU at a higher frequency clock ratio than it's specification allows. it may or may not run at that ratio, depending on the quality of your CPU and the extent to which the ratio has been overset.

This option will not work with frequency lock CPU.

External Clock Frequency (JP3/JP4)

FSB	JP3	JP4
Auto	1~2	1~2
66	2~3	2~3
100MHz	Open	2~3
133MHz	1~2 or 2~3	Open

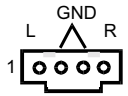
This jumper allows the system bus frequency to be determined either by CPU or the user. If set both JP3/JP4 pins to 1-2, the CPU determines the system bus frequency speed. Set both JP3/JP4 pins to 2-3 for 66MHz FSB, set only JP4 pins to 2-3 for 100MHz FSB and leave JP4 pins open and set JP3 pins to 1-2 or 2-3 for 133MHz FSB.

Onboard Audio (JP5)

Pin	Definition
1~2	Enable (default)
2~3	Disable

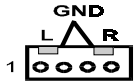
This function allows you to enable or disable the on board audio. You must set the jumper cap to pins 1-2 to enable or set pins 2-3 to disable this function.

CD-ROM Audio-in (CN2)



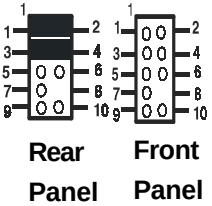
Use the audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.

Auxiliary Audio-in (CN3)



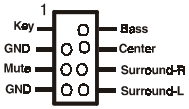
This connector is for use with a secondary CD-ROM, DVD-ROM or CDR/CDRW disk drive.

Front Panel Audio Connector (CN4A)



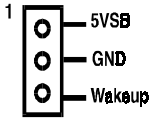
This connector give you the option to choose between standard audio jack(rear panel) or use a an optional front panel audio jack cable ext. to be plug into a special custom designed system case. To use the standard audio jack short jumper caps to pin1-2 and pin 3-4 (Default). To use the front panel audio jack cable ext., simply removed both jumper caps and plug into the audio jack cable.

AC3 Surround/Center + Bass Connector (CN4B)



This connector is for Surround and Center+Bass speaker output ext. Plug in the optional AC3 Surround/Center+Bass jack extension into this connector. The black colored jack is for surround speaker output and the orange colored jack is for center+bass speaker output.

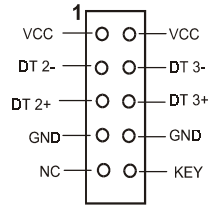
WOL (Wake-on-LAN) Connector (CN6)



Enable the Wake Up On LAN selection in BIOS's Power Management Menu to use this function. The capability to remotely manage PCs on a network is a significant factor in reducing administrative and ownership costs. Magic Packet technology is designed to give WOL (Wake-on-LAN) capability to the LAN controller. When a PC capable of receiving wake up command goes to sleep, the Magic Packet mode in the LAN controller is enabled. When the LAN controller receives a Magic Packet frame, the LAN controller will wake up the PC. This header is used to connect an add-in NIC (Network Interface Card) which gives WOL capability to the mainboard.

To support this function, a switching power supply with a minimum of **750mA** 5VSB standby signal is required.

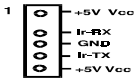
USB 0/1Ports and USB 2/3 Connector (USB1/CN14)



If you want to use a USB keyboard, you must enable the USB keyboard support function in BIOS's Integrated Peripherals menu (See Section 3-4).

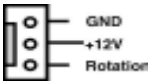
This board contains a USB Host controller and includes a root hub with two USB ports (meets USB Rev 1.0 spec.) and a connector for optional USB Adaptor (USB2/3). Four USB peripherals or hub devices are able to be connected.

IR Connector (IR1)



If you enable the UART Mode in BIOS's Integrated Peripherals menu the UART port will support IR functions. (See section 3-4)

CPU/System Cooling Fan Connectors (FAN1/FAN2)



The board's management extension hardware is able to detect the CPU and system fan speed in rpm (revolutions per minute). These connectors supports 3-pin cooling fans with minimum of 4000 RPM. The wiring and plug may vary depending on the manufacturer. On standard fans, the red is positive (+12V), the black is ground, and the yellow wire is the rotation signal.

2-4 Main Memory Configuration

The DRAM memory system consists two banks and the memory size ranges from **32~512MBytes**. If you only use one bank it does not matter which one you use and if you use two or more banks, it does not matter which bank you install first.

DRAM Specifications

FSB	SDRAM Type	SDRAM Type	Max Memory
66	FSB+33	10ns or faster	1GB
100	FSB	10ns or faster	
	FSB+33	7.5ns or faster	
133	FSB-33	10ns or faster	
	FSB	7.5ns or faster	

DIMM type: 3.3V, 64/72-bit Synchronous DRAM

Module size: Single/double-sided 32/64/128/256/ 512MBytes

DRAM speed: 7.5/10ns for Synchronous DRAM

Parity: Either parity or non-parity

This mainboard supports 3.3v, unbuffered, 4-clock, SDRAM DIMM only. Buffered, 5V, or 2-clock SDRAM DIMMs should not be used.

Due to loading anomalies, using DIMM with an 'n x 4' DRAM base on this mainboard is not recommended. For example, a DIMM that uses sixteen 16Mb x 4 devices should not be used.

Chapter 3

Award BIOS Setup Program

Award's BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This information is stored in CMOS RAM so that it can retain the setup information, even when the power is turned off.

When you turn on or restart the system, press the Delete key to enter the Award BIOS setup program. The primary screen as shown in Figure 3-1 is a list of the menus and functions available in the setup program. Select the desired item and press enter to make changes. Operating commands are located at the bottom of this and all other BIOS screens. When a field is highlighted, on-line help information is displayed on the left bottom edge of the screen.

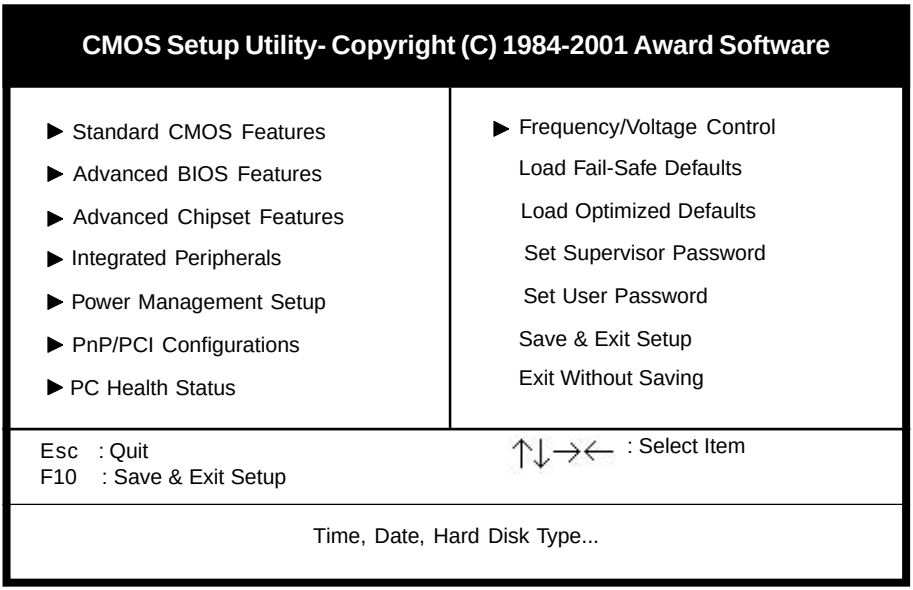


Figure 3-1 Setup Program Initial Screen

3-1 Standard CMOS Features

The Standard CMOS Features allows users to configure system components such as hard disk drive, floppy disk drive and video display as well as date, time and boot up error signaling. This configuration menu should be changed when installing a mainboard for the first time, changing hardware in your system such as the HDD, FDD, video display, or when the CMOS data has been lost or contaminated. Choose the Standard CMOS Setup option from the CMOS Setup Utility menu (Figure 3-1) to display the following screen. When a field is highlighted, on-line help information is displayed on the right side of the screen.

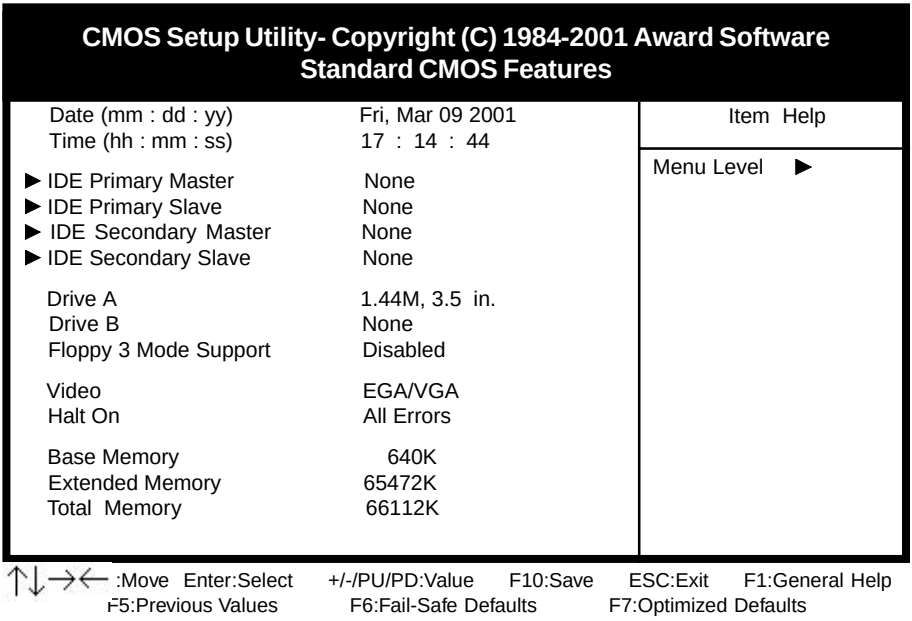


Figure 3-2 Standard CMOS Features Screen

Date/Time

Set the date and time. Do not skip this function as all of your timed events such as power management, saving files, etc. are based on this timer.

Hard Disk Setup (Primary/Secondary; Master/Slave)

This category identifies up to four IDE hard disk drives that have been installed in the computer. This section does not show information on other IDE devices such as CD-ROM drives or other hard drive types such as SCSI drives.

Floppy Disk Drives
Choose the memory capacity and disk size that corresponds with that of your floppy disk drive(s).

Video
Select the type of video adapter present in your system. You can ignore this setting if you are using a VGA monitor since VGA BIOS automatically configures this setting.

Halt
When the system is powered on, BIOS performs a series of diagnosis tests called POST (Power On Self Test). This function stops the computer if BIOS detects a hardware error. You can tell BIOS to halt on all errors, no errors, or not to halt on specific errors.

3-2 Advanced BIOS Features

By choosing the Advanced BIOS Features option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard**.**

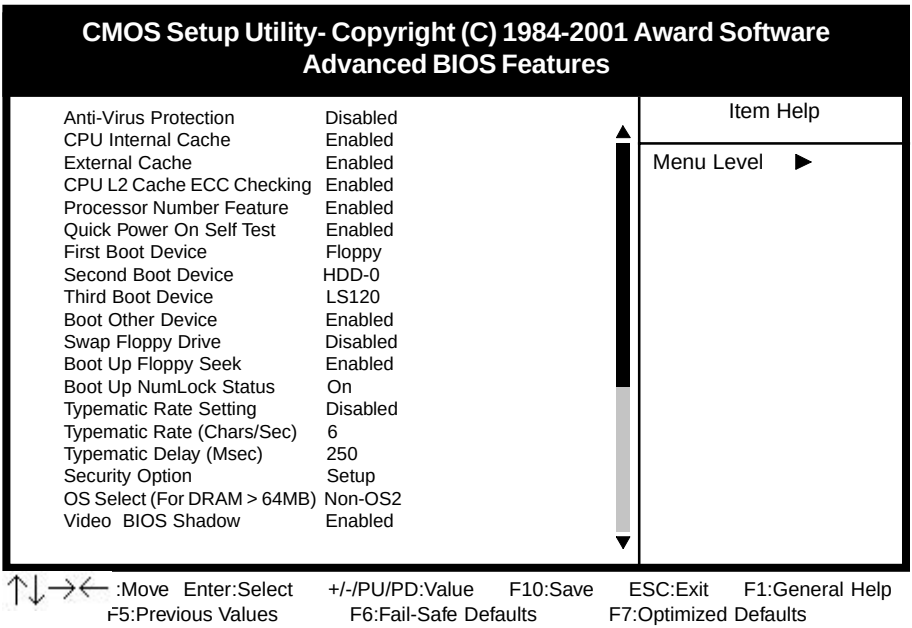


Figure 3-3 Advanced BIOS Features Screen

A. Anti-Virus Protection

Trend ChipAway Virus

Trend ChipAway Virus is a code incorporated in the mainboard's BIOS firmware. During the boot-up sequence, BIOS loads before loading of the partition table or boot sector. ChipAway Virus loads with BIOS and is able to detect boot-up viruses before they have a chance to infect the hard drive. ChipAway Virus employs rule-based logic that doesn't look for specific viruses but rather detects patterns found in every virus, eliminating the need to perform periodical version updates after new viruses have been found.

B. Cache Control

CPU Internal Cache/External Cache

Cache memory is much faster than conventional DRAM system memory. These fields allow you to enable or disable the CPUs Level 1 built-in cache and Level

2 external cache. Both settings are left enabled to significantly increase the performance of your computer.

C. Boot Up Features

After turning on the system, BIOS will perform a series of device initialization and diagnostic tests discussed below.

Quick Power On Self Test (POST)

Enable this function to reduce the amount of time required to run the POST (Power On Self Test). BIOS saves time by skipping some items during POST. It is recommended that you disable this setting. Discovering a problem during boot up is better than loosing data during your work.

First/Second/Third/Boot Other Device

This option sets the sequence of drives BIOS attempts to boot from after POST completes. BIOS will search these drives for an operating system.

Swap Floppy Drive

Enabling this function will swap the floppy drive assignment so that drive A will function as drive B, and drive B will function as drive A. Note that the boot sequence assignment mentioned directly above does not include booting from floppy drive B. This function is useful if floppy drives B and A are of a different format and you want to boot from floppy drive B.

Boot up Floppy Seek

During POST, BIOS will determine if the installed floppy disk drive has 40 or 80 tracks. A 360K drive has 40 tracks and 720K, 1.2M and 1.44M drives have 80 tracks. All modern floppy disk drives have 80 tracks.

Boot Up NumLock Status

This function defines the keyboard's number pad as number keys or arrow keys.

D. Keyboard Interface

Typematic Rate Setting

When enabled, you can set the following two typematic control items. When disabled, keystrokes are determined arbitrarily by the keyboard controller in your system.

Typematic Rate (Chars/Sec)

The typematic rate sets the rate at which characters on the screen repeat when a key is pressed and held down.

Typematic Delay (Msec)

The typematic delay sets how long after you press a key that a character begins repeating.

E. Security Option

The Supervisor and/or User Password functions shown in Figure 3-1 must be set to take advantage of this function. See Section 3-11 for password setting information. When the Security Option is set to System, a password must be entered to boot the system or enter the BIOS setup program. When the Security Option is set to Setup, a password is required to enter the BIOS setup program.

F. OS Select (For DRAM >64MB)

If your system's DRAM is larger than 64MB and you are running OS/2 , select OS/2 as the item value. Otherwise, set the item value to Non-OS/2 for all other operating systems.

G. Shadow Memory

Software such as system BIOS, video BIOS, SCSI BIOS, etc. that resides in ROM (Read Only Memory) chips is called firmware. Shadowing of firmware occurs when BIOS is copied to RAM address C0000h through DFFFFh. Video BIOS loads into the C0000-C7FFF memory area when video shadowing is enabled. If an expansion peripheral in your system contains ROM-based firmware, you need to know the address range the ROM occupies to shadow it into the correct area of RAM.

Shadowing improves the firmware's performance because the firmware can be read by the CPU through the 16- or 32-bit DRAM bus as opposed to the 8-bit XT bus. However, shadowing also results in reducing the amount of high memory (640 KB to 1 MB) for loading device drivers. Shadowing is used mostly for ROM chips on ISA cards and not for PCI cards. Shadowing and playing games at the same time may result in system instability as some games access the RAM memory area being shadowed.

3-3 Advance Chipset Features

By choosing the Advanced Chipset Features option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard**.**

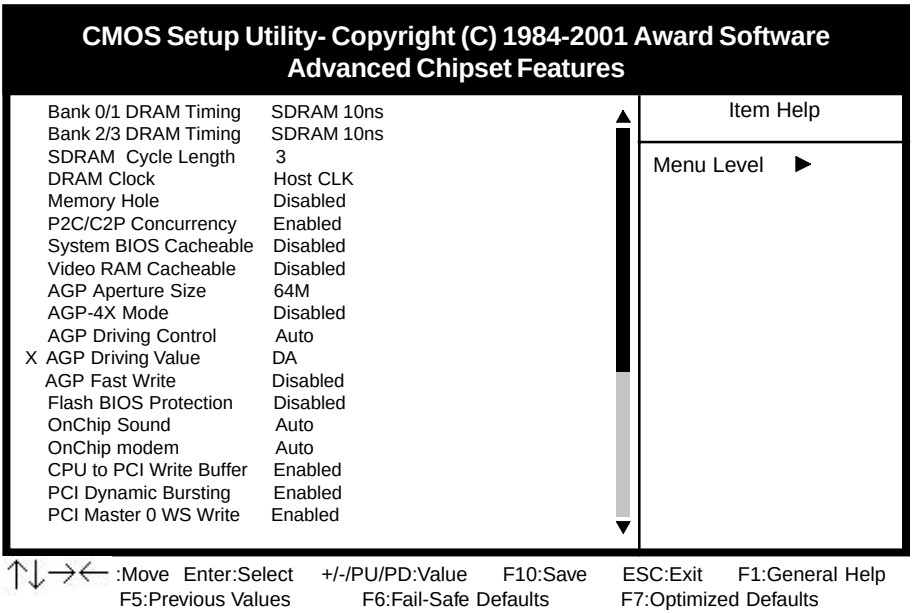


Figure 3-4 Chipset Features Setup Screen

All of the above settings have been determined by the mainboard manufacturer and should not be changed unless you are absolutely sure of what you are doing. Explanation of the DRAM timing and chipset features setup is lengthy, highly technical and beyond the scope of this manual. Below are abbreviated descriptions of the functions in this setup menu. You can look on the world wide web for helpful chipset and RAM configuration information including AWARD's web site at http://www.award.com.

A. BANK 0/1 & 2/3 DRAM Timing

This item allows you to select the value in this field, depending on whether the board has paged DRAM or EDO (Extended Data Output) DRAMs.

B. SDRAM Cycle Length

When synchronous DRAM is installed, the number of the clock cycles of CAS latency depends on the DRAM timing. Do not reset this setting from the default value specified by the system designer.

C. Memory Hole at 15M-16M

Enabling this function will reserve the memory address space between 15MB and 16MB for ISA expansion cards. However, enabling this function will result in not allowing the system to have access to memory above 16MB. Please note that some expansion cards require this setting to be enabled. The default setting is Disabled. If Auto Configuration is enabled, you must set the DRAM timing function to 60ns or 70ns, depending on the type of DRAM you install.

D. System BIOS Cacheable

Enabling this function allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. Caching the system BIOS results in better performance than shadowing the system BIOS as discussed in Section 3-2.

E. Video RAM Cacheable

Enabling this function will allows caching of the video RAM, resulting in better system performance. However, if any programs write to this memory area, a system error may occur.

F. AGP Aperture Size

This function determines the amount of system memory that is given to the AGP card. Options range from 4MB to 128MB. This is a dynamic memory allotment in that the AGP card will only use the amount of memory that it needs. The remaining memory not in use will be available for the system to use. For example, if 16MB is allotted to the AGP card and the card only needs 8MB, the remaining 8MB will be available for system use.

G. AGP-4X Mode

Enable this setting to utilize the 4X mode (twice as fast as2X) offered by advanced AGP cards. Your VGA card must support 4X mode in order to take advantage of the faster speed.

H. Flash BIOS Protection

The mainboard manufacturer developed BIOS protection technology that protects the System BIOS from accidental corruption by unauthorized users or computer viruses. When enabled, the BIOS data cannot be changed when attempting to update BIOS with the FLASH utility. When disabled, the BIOS data can be updated by using the FLASH utility.

I. OnChip Sound

This function must be enabled in order to use the onboard audio function. To terminate this function set it to disabled.

J. OnChip Modem

This function must be enabled in order to use the soft modem riser card on CNR slot(optional). To terminate this function set it to disabled.

K. Memory Parity/ECC Check

If the DRAM chips in your system support parity/ECC check, select Enabled

3-4 Integrated Peripherals

This section provides information on setting peripheral devices. By choosing the Integrated Peripherals option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

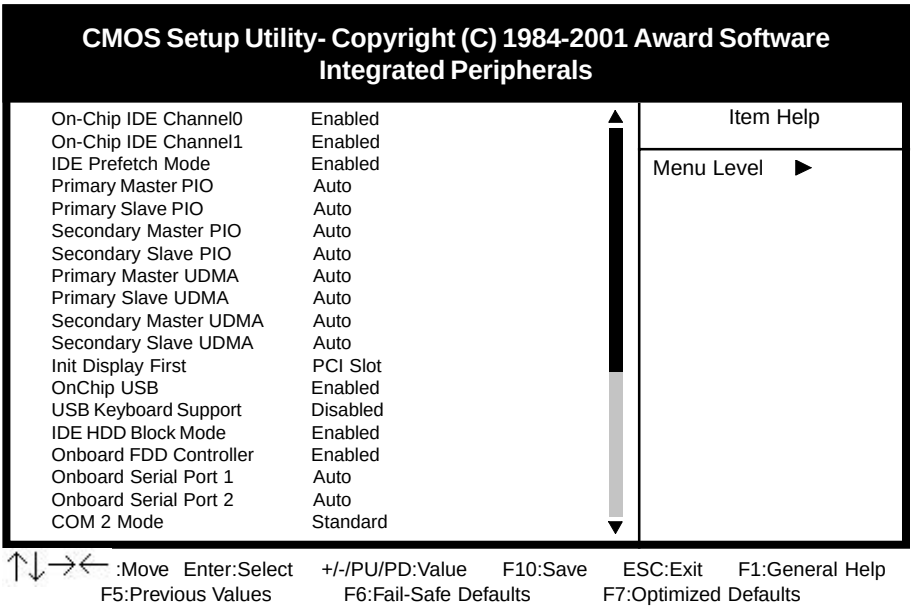


Figure 3-5 Integrated Peripherals Screen

A. On Board IDE Control

On-chip IDE channel 0/1

You can set this to disable the On-chip IDE controller if you are going to add a higher performance IDE board.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (programmed Input/Output) fields let you set a PIO mode (0-4) for each IDE device that the internal PCI IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

B. Init Display First

This function allows user to choose between AGP slot or VGA slot to initialize Display first .

C. OnChip USB

Enable the on-board Universal Serial Bus (USB) controller if you want to connect a USB keyboard to your system. Note that if this setting is disabled, you can still temporarily use a USB keyboard during bootup so that you can enter BIOS and enable this setting. If you pass the bootup stage without enabling this function, your PS/2 keyboard will no longer work.

D. USB Keyboard Support

Select Enabled if your system has a USB keyboard installed on the system board. If your system has no USB keyboard, select Disabled in this field.

E. IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

F. Onboard FDD Controller

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.

G. COM2 Mode Select

This function allows you to select an operating mode for the second serial port. (**Normal** RS-232C serial port/**IrDA SIR** 1.0 specification/**ASKIR** 0.57-MB/sec infrared port)

H. Onboard Parallel Port

Select a logical LPT port address and corresponding interrupt for the physical parallel port.

I. Parallel Port Mode

Select an operating mode for the onboard parallel (printer) port. Select SPP unless you are certain your hardware and software support one of the other available modes.

3-5 Power Management Setup

This section provides information on the Green PC power management functions. By choosing the Power Management Setup option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard

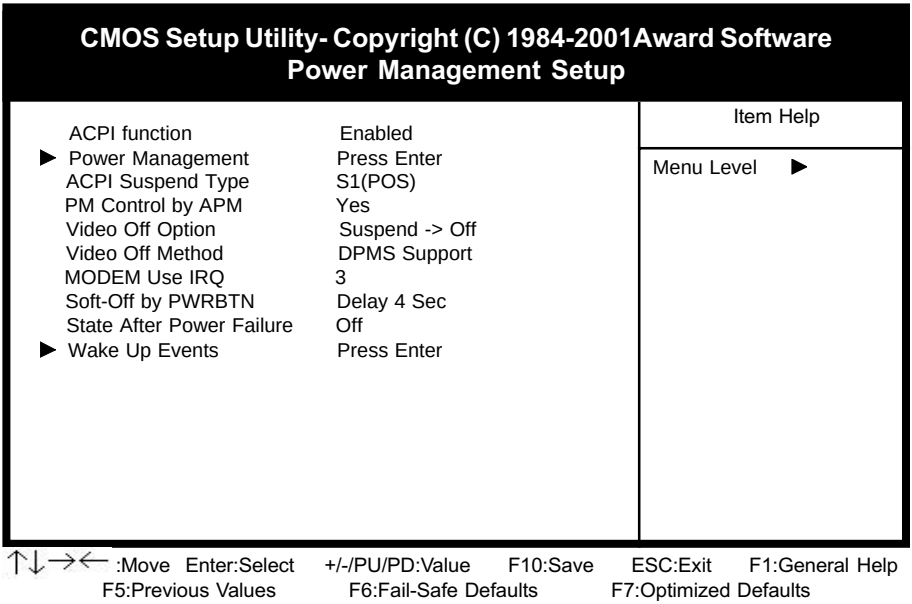


Figure 3-6 Power Management Setup Screen

A. Advanced Configuration Power Interface (ACPI)

ACPI management enables the operating system to control the amount of power given to each device attached to the computer. With ACPI, the operating system can turn off peripherals devices, such as CD-ROM players, when they are not in use.

B. Power Management

Power management allows the computer to save electricity when it is not in use by entering increasingly deep power saving modes as shown by the diagram below.

C. Video Off Option

This setting allow you to selects the power-saving modes during which the monitor goes blank:

D. Video Off Method

This function serves as both a screen saver and power saver for monitors. See the next function, Video Off After, for setting the video timer.

Blank - BIOS will only blank the monitor's screen. The electricity saved in this mode is negligible and this function is only used as a screen saver to prevent screen damage while the screen is on but not in use.

V/H SYNC+Blank - The system turns off the vertical and horizontal synchronization ports, writes blanks to the VGA buffer and the monitor's electron gun turns off. This function requires a monitor with Green features in order to take advantage of the power saving function. If you enable this function and do not have a Green monitor, the result will be the same as if you had selected Blank. This function serves as both a screen saver and an electricity saver.

DPMS Support - Select this option if your video card supports the Display Power Management Signaling (DPMS) standard (i.e., you have a monitor that supports Green features). Use software supplied by your video subsystem to set video power management options.

E. Modem Use IRQ

If your computer has an modem, use this function to tell BIOS which IRQ is being occupied by the modem card. When the system is in Green mode, the modem requires an IRQ assignment to wake up the system and perform tasks. This assignment is compliant with the APM 1.2 specification and is to be used in coordination with APM 1.2 compliant operating systems.

F. Soft-Off by PWRBTN

When set to Delay 4 Sec., this function allows the power button to put the system in Suspend, a power saving mode. See Section 2-4 for operation instructions of the override power button operation which puts the system in Suspend mode. When set to Instant-Off the Soft-Off by PWRBTN function is disabled and the computer turns completely off when the power button is pressed.

H. Power On By Modem/LAN

When enabled, a modem/LAN that receives a signal will wake up the system from soft off and green mode. You should connect the modem to the COM port and turn on the resume event in green mode.

I. Power On By Alarm

When enabled, this setting allows the system to turn back on at a designated time of the month. User must designate date of month and time of day. This function is only available when using an ATX power supply and the Software Power-Off function to turn off the computer. See the Software Power-Off feature in Section 2-4 of this manual for instructions.

3-6 PNP/PCI Configuration

This section provides IRQ and DMA setting information. By choosing the PNP/PCI Configuration option from the Standard CMOS Features menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.

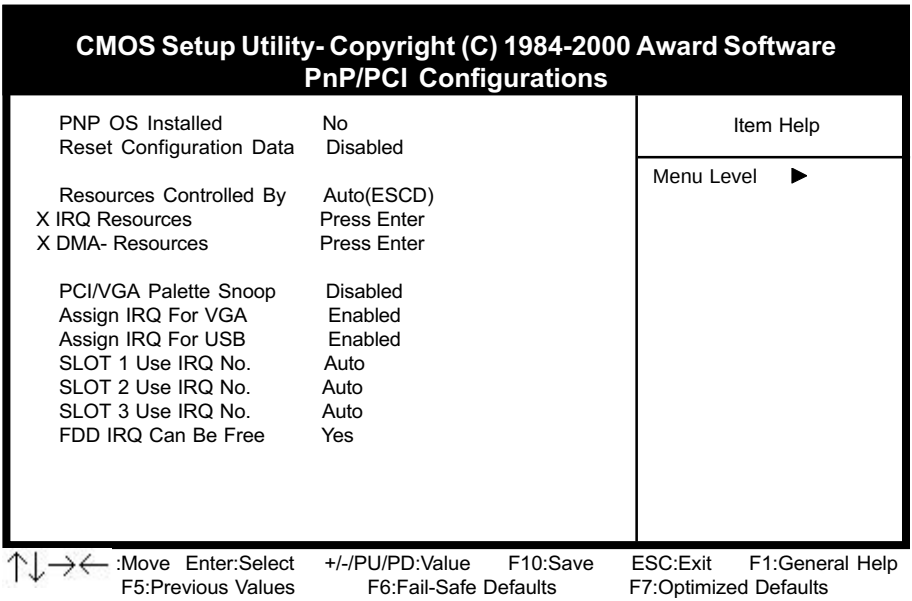


Figure 3-7 PnP/PCI Configurations Screen

A. PNP OS Installed

If you want to install a PNP compatible OS(such as Windows 95) set to Yes.

B. Resources Controlled By

When set to Manual the system BIOS will not refer to the ESCD for IRQ & DMA information. Instead, it will refer to the items in the setup menu for assigning IRQ & DMA. When set to Auto the system BIOS will refer to the ESCD for all legacy information.

ESCD (Extended System Configuration Data) provides a detailed format of the configuration data structures stored in flash memory. Each data structure defines the resources used by a device or a card in the system. This includes legacy and PCI/ISA PnP devices.

C. FDD IRQ Can Be Free

This function allows user to choose if the FDD IRQ is able to be freed up. The default setting is Yes and this does not allow the IRQ to be free.

3-7 PC Health Status

By choosing the PC Health Status option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This field shows you the current system temperature/external voltages input and the current CPU FAN and System FAN operating speed.

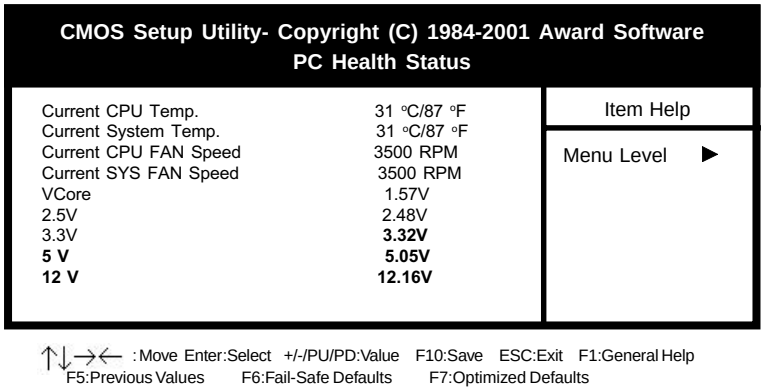


Figure 3-8 PC Health Status Screen

3-8 Frequency/Voltage Control

By choosing the **Frequency/Voltage Control** option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard**.**

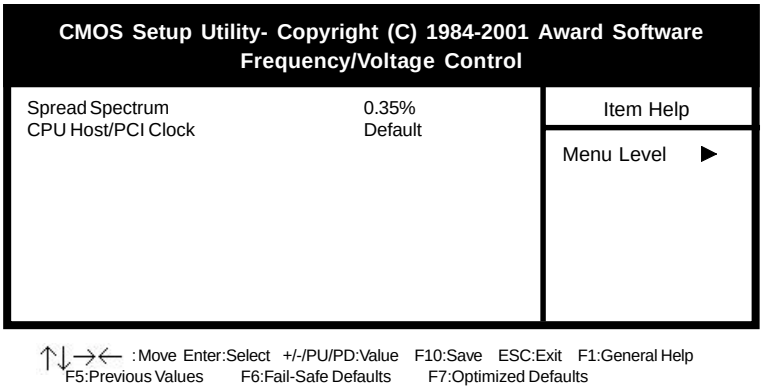


Figure 3-9 Frequency/Voltage Control Screen

A. CPU Host/PCI Clock

This field allows you to select a timing combination for CPU Host/PCI clock.

3-9 Load Fail-Safe Defaults

Load Fail-Safe Defaults loads the default BIOS values directly from the CMOS Setup Utility menu (Figure3-1). If the stored record created by the setup program becomes corrupted and therefore unusable, these defaults will be loaded automatically when you turn on the computer.

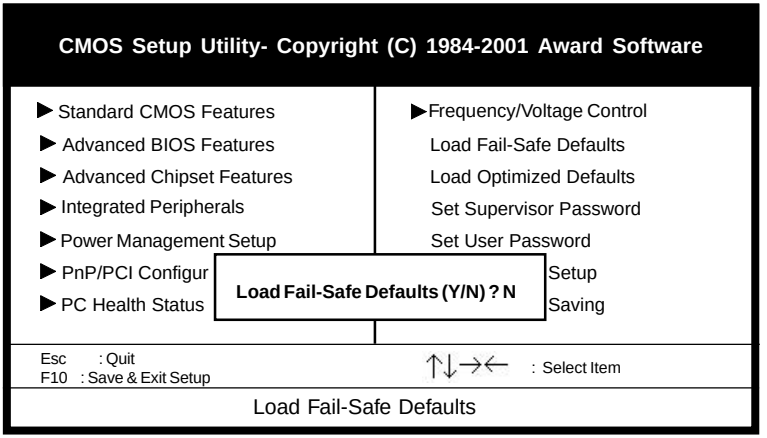


Figure 3-10 Load Fail-Safe Defaults Screen

3-10 Load Optimized Defaults

Load Optimized Defaults loads the default system values directly from the CMOS Setup Utility menu (Figure3-1). If the stored record created by the setup program becomes corrupted and therefore unusable, these defaults will be loaded automatically when you turn on the computer.

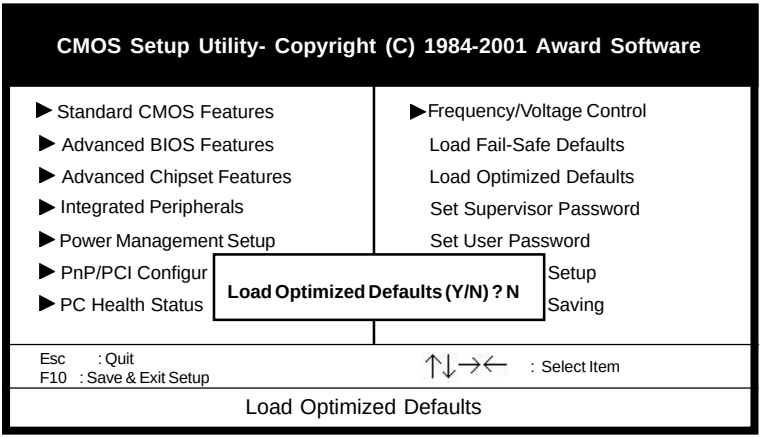


Figure 3-11 Load Optimized Defaults Screen

3-11 Supervisor Password & User Password Setting

There are four different variables that control password settings. The first two are located under the Security Option function in BIOS Features Setup Menu (Figure 3-1). When the Security Option function is set to Setup, a password is required to enter BIOS and change BIOS settings. When the Security Option function is set to System, a password is required to enter both BIOS and the computer's operating system (for example Windows 98) found on the boot drive.

The third and fourth variables are user password and supervisor password selected in BIOS (Figure 3-1). The main purpose of separating user and supervisor is to allow only the supervisor to have control over the settings in BIOS. The user, on the other hand, is only allowed to access the computer's operating system and change the user password in BIOS. Note that when there is no supervisor password set, the user password controls access to all BIOS settings.

3-12 Save and Exit Setup

If you select this and type Y (for yes) followed by the [Enter] key, the values entered in the setup utilities will be recorded in the CMOS memory of the BIOS chip.

3-13 Exit Without Saving

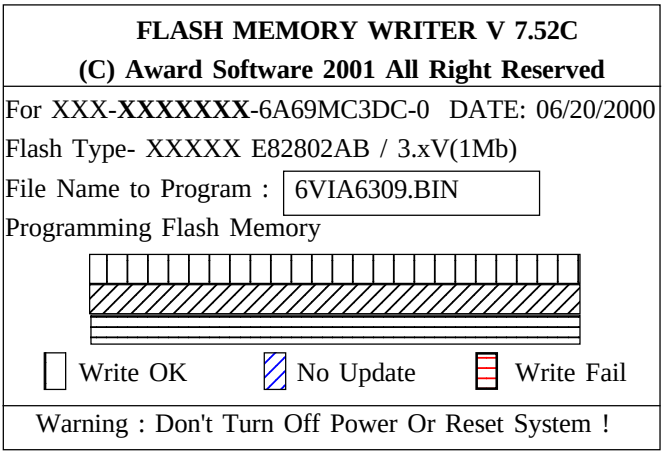
Selecting this option and pressing Y followed by the [Enter] key lets you exit the Setup program without recording any new values or changing old ones.

Embedded Flash Utility

This mainboard is equipped with an Erasable Flash ROM and an Embedded Flash Utility which allows the user to update the BIOS to a newer version. Embedded Flash Utility eases BIOS upgrade and eliminate the compatibility issue between different Flash ROM type and version of Flash utility.

Update Your System BIOS

1. Start computer, upon post, press ALT+F2 Keys to enter AWDFLASH setup.
2. Insert the floppy disk with the latest BIOS file into the floppy drive A(or B) and then press Enter to start programming.



Sample of Programing Flash Memory Screen

3. When finished, the system will automatically restart.

Note:

- Flash BIOS Protection must be set to Disabled in the Advance Chipset Feature from the CMOS Setup Utility menu. See Chapter 3.
- Don't turn off or restart your system during programming process.
- Make sure that your floppy diskette have only one BIN file to avoid confusion.

Memo