Declaration of Conformity

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

The following designated product:

EQUIPMENT: MAINBOARD

MODEL NO. : 6OJA3T/6OJV3T

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 INC.

4427 Enterprise St. Fremont, CA 94538, U.S.A.

http://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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May 2001

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100% POST-CONSUMER RECYCLED PAPER

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Feature Explanations

Chapter 1
Introduction

1-1 Product Specifications

❒ **Processor**
- Supports Intel Celeron/Coppermine/Tualatin Socket-370 processors
- Supports 66/100/133 MHz system clock speeds

❒ **Chipset**
- Intel 815EP GMCH + ICH2 Chipset or Intel815E GMCH + ICH2 AGPset with integrated 2D/3D graphics controller

❒ **DRAM Memory**
- Three 3.3V 168-pin DIMM sockets support up to 1.5GB
- Supports PC-100/133 DIMMs at 100/133MHz FSB Freq.

❒ **Expansion Slots**
- One **CNR** slot (v1.0 compliant) for low cost networking solution w/100 LAN/PNA + Soft-modem
- Six 32-bit PCI slots with full master sharing controller (Rev 2.2 compliant)
- One 4xAGP slot w/ AIMM (v2.0 compliant) for graphics performance upgrade

* Supports for 2x 1Mbx16, or 1x 2Mbx32 on an optional AIMM card

❒ **2Mb Boot-Block Flash ROM**
- Intel 2Mb FWH(Firmware Hub)
- Award System BIOS, supports PnP, APM, DMI,ACPI & Multi-device booting features(floppy, LS120, CD-ROM, HDD(IDE, SCSI), ZIP-ATAPI etc.)
- **BIOS Wonder** technology including ChipAway Virus, Flash BIOS Write Protect, Embedded Flash Utility, Built-in **Hard Disk Backup firmware**
- Optional **TWIN BIOS** with Instant BIOS Recovery for triple BIOS insurance

❒ **Embedded Super I/O Functions**
- ITE 8712 LPC I/O chip with System Monitor Hardware
- One parallel supports SPP/ECP/EPP and two serial (16550A compliant) ports
- One floppy disk drive connector supports up to 2.88MB, Japanese 3- Mode and 1Mbps transfer rate
- Supports HPSIR, ASKIR and CIR function shared with 2nd serial port
- Supports Game/MIDI port (for soft-audio)

❒ **Embedded Ultra DMA-100 PCI IDE controller**

- Supports two IDE ports up to 4 ATAPI devices
- Supports up to PIO Mode 4 up to 16.6MBps, Multi-Word Mode 4 up to 66MBps and Ultra DMA mode 5 with bus mastering
- Bus Master software drivers for all well known multi-task operating systems

❒ **Double Stack Back-Panel I/O Connectors with PC99 Colored Codes**

- PS/2 Mini-DIN keyboard and mouse ports
- Two Channel USB ports
- One D-SUB 9-pin male serial ports
- One 15-pin D-SUB female VGA port (optional for Intel 815E only)
- One D-SUB 25-pin female Printer port
- One D-SUB 15-pin female Game/MIDI port
- Audio Line-out, Line-in and Mic-in jacks

❒ **Optional Embedded Audio Subsystem via AC-Link**

- AC' 97 v2.1 compliant CODEC with integrated SRC

❒ **Optional PCI Audio Subsystem**

- CMedia 8738 audio chip w/ legacy audio SB16/Pro compatible
- Advanced 64-voice wavetable synthesizer
- Programmable independent sample rate from 4KHz to 48KHz for recording and playback
- Full-duplex operation for simultaneous recording and playback
- Supports MS DLS (Downloadable sample) level-1 technology with limitless variety of instrument samples using PC RAM
- Supports HRTF 3D positional audio with MSDS, DS3D, DirectMusic, Aureal A3D and Creative EAX (Environment Audio Extensions), C3DX APIs
- Option of 4 or 6-Channel speaker audio support
- Supports Fiber Optic module for Internet music, PC, and MD connections
- Supports MIDI and game ports
- Embedded 32OHM .5w earphone amplifier

❒ **Embedded USB Controller**

- USB host controller (UHCI v1.0 compliant) with Root Hub
- Optional two USB ports provided via USB kit

❒ **Embedded System Monitoring Hardware Subsystem**

- 8 external voltage inputs for CPU Vcore, 1.5v, 3.3v, +/-12v, +5v, 5Vsb, Vbat
- 2 temperature inputs VT1 for System temperature VT2 for CPU thermal diode
- 4VID inputs pin for CPU Vcore identification
- 2 Fan speed (CPU and System) monitoring and control with ON/OFF control in suspend

❒ **Optional Embedded 3D AGP VGA (for Intel 815E only)**

- 3D Hyper pipelined architecture with PDP (Parallel Data Processing), PPI (Precise Pixel Interpolation)
- 3D graphics visual enhancements
- Texture color keying/ Chroma keying can be globally enabled or disabled
- Integrated 24-bit 230MHz RAMDAC
- Full 2D H/W acceleration with up to 1600 x 1200 in 8-bit color at 85Hz refresh
- Motion Video acceleration for 30fps software DVD
- Digital video output
  * 1024x768 85MHz Flat Panel Monitor/ Digital CRT Interface
  * Use an external TV encoder for NTSC and PAL TV out support
  * Independent gamma correction, saturation, brightness and contrast for overlay
- Optional LTI2 slot for Panel Link LCD monitor

❒ **Board Dimensions**

- Standard ATX form factor, 305mm x 220mm, 4 Layers

❒ **Switching Power Supply Requirement**

Output Voltage	Max. Regulation Requirement	Min. Current Requirement (Amps)
+12V	+/- 5%	5.5
+5V	+/- 5%	20
+3.3V	+/- 5%	15
-5V	+/- 10%	0.5
-12V	+/- 10%	0.5
+5VSB	**+/- 5%**	**0.75**

Table 1-1

3.3V at 15Amps is necessary to guarantee full loading operation because some AGP cards and memory modules have high current consumption.

1-2 Product Features

- Complete CPU protection with OVT (Over Voltage Protect) and OCP (Over Current Protect) technology
- System Monitor Hardware
- Poly-fuse over-current protection with error warning for keyboard circuitry
- Chassis intrusion detection with mnemonics during power loss

- Complete Data Security:
  * **Flash BIOS write protection** against unauthorized access
  * **Trend ChipAway Virus** for a 100% virus free system boot-up
  * **Embbeded Flash Utility** to ease BIOS upgrade and eliminate in compatibility with the flash utility version.
  * **Embedded HDD Instant Recovery** to protect against system crash.

- 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
  * Three states advanced Power-failure recovery: Always On, Always Off, Last state
  * Blinking Power-LED in suspend

1-3 Package Contents

This product comes with the following components:

- ❒ One mainboard
- ❒ One 40-pin 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)
- ❒ One User's Manual
- ❒ One CD-ROM that includes
  - Award Flash EPROM Utility and DMI Utility for DOS
  - Intel Bus Master IDE drivers for Win9x
  - Intel Security Driver
  - Audio drivers for Win9x, NT4.0, Win2000
  - Optional **CMedia 8738** audio driver for Win9X, NT and Win2000
  - 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.

Optional Items

- ❒ **LTI2** Panel link adapter for LCD (for Intel 815E only)
- ❒ AIMM card (boost up to 4MB display cache at 133MHz)
- ❒ 9-pin serial "COM2 Cable port" (Figure 1-3)
- ❒ AC3 Surround/Center + Bass jack extension. (Figure 1-4)

Figure 1-1 UDMA66 IDE cable

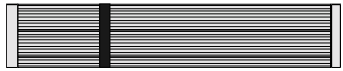


Figure 1-2 Standard Floppy cable

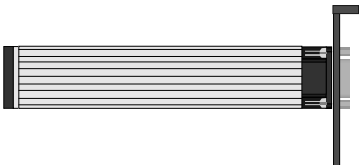


Figure 1-3 COM2 Cable (Optional for Intel 815E only)

Figure 1-4 AC3 Surround/Center + Bass jack extension (Optional)

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 Introduction to Jumpers

Jumpers are used to select between various operating modes. A jumper consists of a row of gold colored pins that protrude from the surface of the mainboard. It is important not to confuse jumpers with connectors or headers.

Putting jumper caps on anything that is not a jumper may result in damaging your mainboard. Please refer to Section 1-3, Mainboard Layout, for the location of jumpers on your mainboard.

As indicated in Figure 2-1 below, a cap is used to cover the pins of a jumper, resulting in shorting those pins that it covers. If the cap is removed from the top of the pins, the jumper is left "open." The number 1 shown both in the diagram below and in all multiple pin jumper and header diagrams in this manual indicates the pin designated with the number 1. The numbering of the remaining pins follows in sequence.

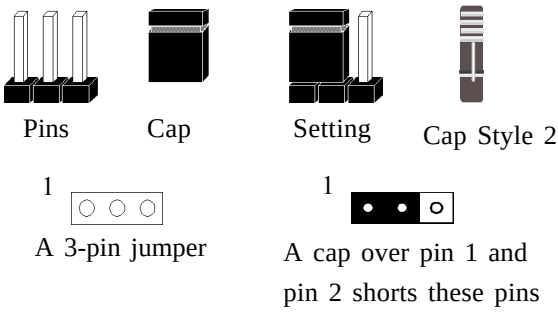


Figure 2-1

2-2 Installing a CPU in a Socket 370

The Intel Socket 370, designed for the Celeron/Coppermine and Tualatin processors, 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.

2-3 Setting Your CPU's Parameters

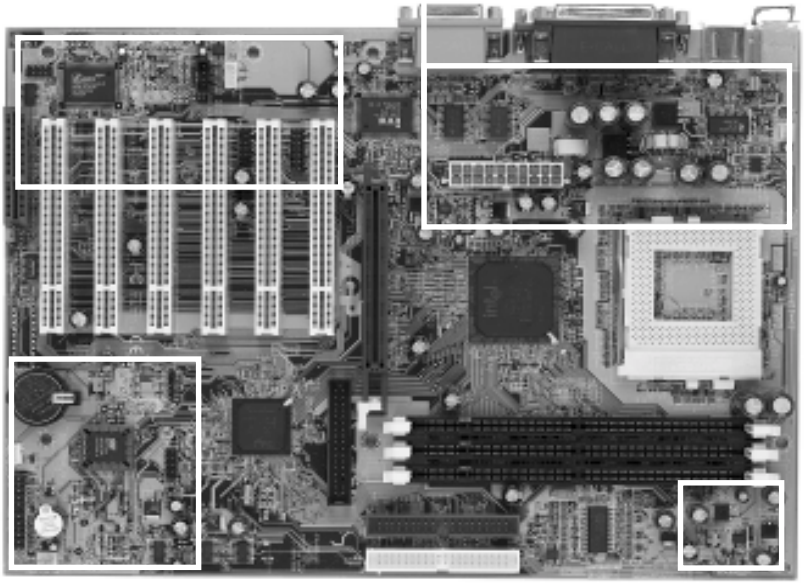
This board support plug and play CPU configuration, if you install a CPU on this mainboard, the board will automatically detect and set CPU parameters. It is no longer necessary to make many jumper settings as on conventional mainboards.

1. After installing all your hardware into your PC system, turn on your system's power. Enter the CMOS Setup Utility by pressing the Delete key when your BIOS identification screen appears.
2. Move the cursor to Frequency/Voltage Control Setup menu and press Enter. Find the CPU bus frequency at the left hand side of the BIOS screen. Commands for operating the cursor in BIOS are found at the Bottom right of the BIOS screen.
3. Set the CPU bus frequency according to your processor's specifications.
4. Press Esc to return to the CMOS Setup Utility, press F10 to Save and Exit Setup and choose 'Y' to confirm. The system will automatically reboot and during startup you will see the correct CPU type shown on the screen.

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

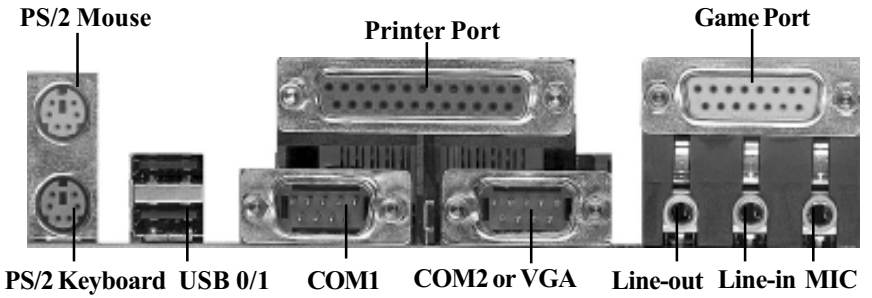
CN2,CN3,CN4,CN4B,CN4C, CN7,JP8,IR2

JP5,JP6,FAN1,PW1, COM2,LTI1



JP1,CN1,CN5,CN6 CN10,FAN2

JP2A/ JP2B

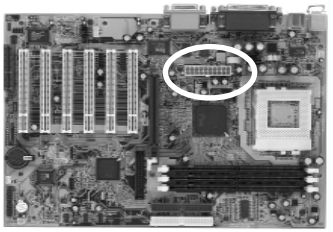


2-4 Connector and Jumper Settings

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.

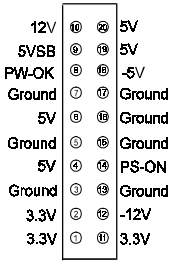
The power supply connector is the last connection to be made while installing a mainboard. Before connecting the power supply, please make sure it is not connected to the power source.

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.

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



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.

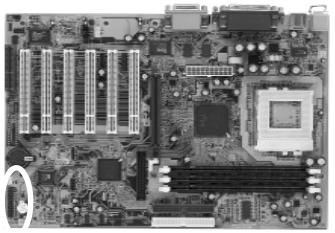
Power-On By Modem

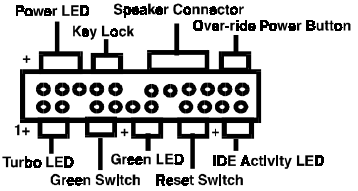
While in Soft-off state, if an external modem ring-up signal occurs, the system wakes up and can be remotely accessed. You may enable this function in BIOS's Power Management Setup menu.

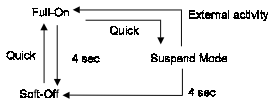
Poly-fuse Over Current Protection

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







Over-ride Power Button Operation

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.

When the Soft-OFF by PWR-BTTN function is enabled, pushing the power button rapidly will switch the system to Suspend mode. Any occurrence 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

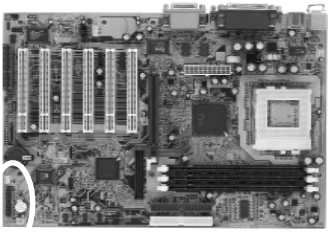
The power indicator LED shows the system's power status. It is important to pay attention to the correct cables and pin orientation (i.e., not to reverse the order of these two connectors.)

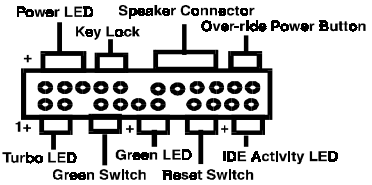
Power Indicator LED

Pin	Definition
1	+5V DC
2	No Connection
3	Ground

Software Power-Off Control

This mainboard can be powered down using the Windows 95/98 Software Power-Off function. To power down your computer, click the START button on the Windows 95/98 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.





C. Green Switch/Green LED 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.

Pin	Definition
1	System
2	GND

E. Speaker Connector

Pin	Definition
1	Speaker Signal
2	No Connection
3	No Connection
4	+5V DC

F. IDE Activity LED Connector

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

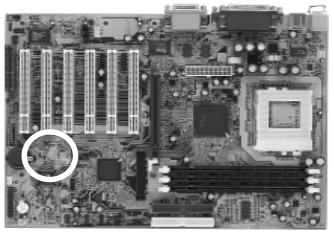
G. Turbo LED Connector

This mainboard does not have a Turbo/De-turbo speed modes. So the turbo LED will always light.

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.

Clear CMOS Data (JP1)



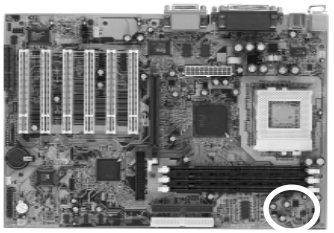
1 Normal (default)

1 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.

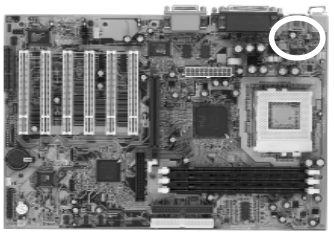
CPU Bus Frequency (JP2A/JP2B)



FSB	JP2B	JP2A
Auto(default)	1 ~ 2	1 ~ 2
100MHz	2 ~ 3	1 ~ 2
133MHz	Open	2 ~ 3

This jumper allows the CPU bus frequency to be determined either by the CPU or the user. Set both jumper cups to pin 1-2 (default) if you are not sure what frequency your CPU support.

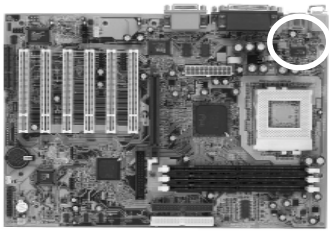
PS/2 Keyboard Power On Function (JP5)



1 Disabled (default) 1 Enabled

This board is able to be turned on by the keyboard. To use this function, enable the Power On Function option in BIOS's Integrated Peripherals screen (See section 3-8). You must also set this jumper's cap to pins 2-3 to use this function. Some out-of-date keyboards may require larger current than supplied by the Suspend 5V of modern power supplies. When using older keyboards disable this function.

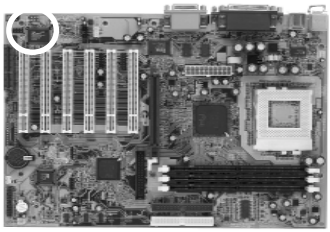
USB Device Power On Function (JP6)



1  Disable (default) 1  Enable

This board is able to be turned on by a USB keyboard (hot key/Password) or a USB mouse click. To use this function, select a device of your choice at the Power on Function option in BIOS's Integrated Peripherals screen. You must also set jumper caps to pins 2-3 to use this function.

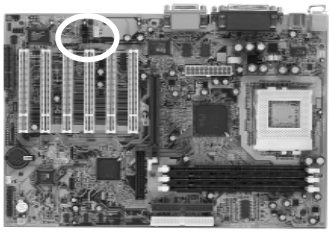
Onboard Audio (JP8)



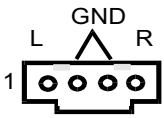
1  Enable(default) 1  Disable

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

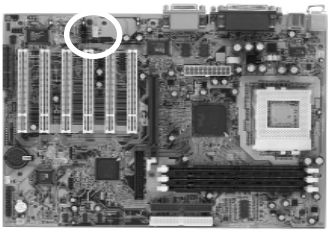
CD-ROM Audio-in Connector (CN2)



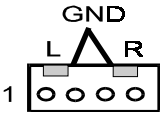
Use the audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.



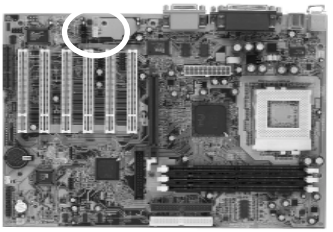
Auxiliary Audio-in Connector (CN3)



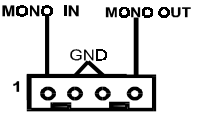
Use the auxiliary audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.



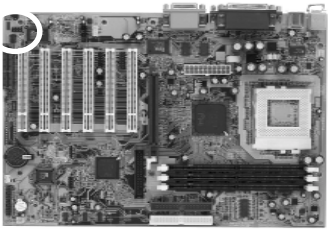
Optional Audio Mono-in/out Connector (CN4)



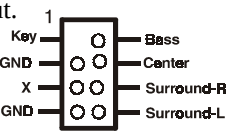
Use the mono audio cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable mono audio in/out function.



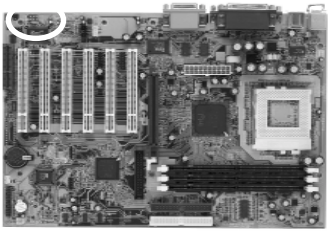
Optional AC3 Surround/Center + Bass Connector (CN4B)



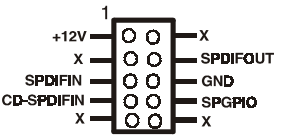
This connector is for Surround and Center+Bass speaker output ext. Plug in the optional AC3 Surround/Center+Bass jack extension into this connector. The black colored jack is for surround speaker output and the orange colored jack is for center+bass speaker output.



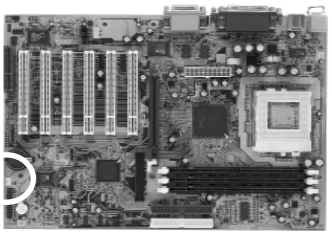
Optional S/PDIF-In/Out Connector (CN4C)

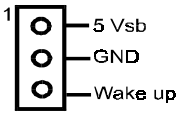


The S/PDIF-In/Out connector supports the digital audio. This connector must be connected to the cable from an external device. (Ex. 2-channel decoded AC-3 from DVD decoders)



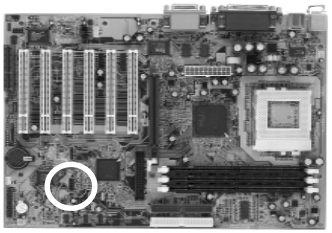
WOL (Wake-on-LAN) Connector (CN5)





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.

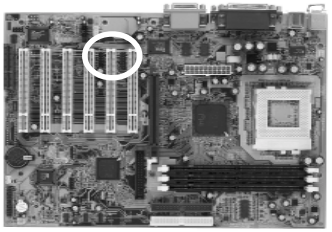
USB Ports and USB 2/3 Connector (USB1/CN6)



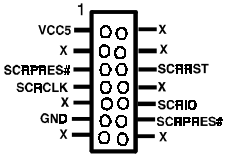
If you want to use a USB keyboard, you must enable the onchip USB & USB keyboard support function in BIOS's Integrated Peripherals menu (See Section 3-4). USB is an open industry standard, providing a simple and inexpensive way to connect up to 125 devices to a single computer port. Keyboards, mice, tablets, digitizers, scanners, bar-code readers, modems, printers and many more can all be used at the same time.

This board contains a USB Host controller and includes a root hub with two USB 0/1 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.

Smart Card Reader Connector (CN7)

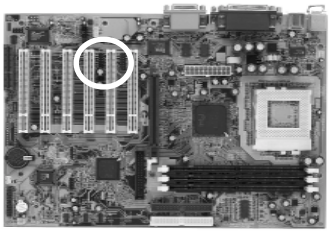


This connector must be connected to a Smart card reader(Optional).

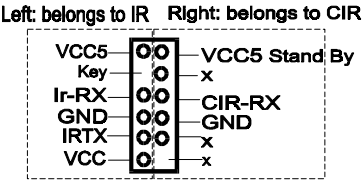


Smart Card Reader (Optional)

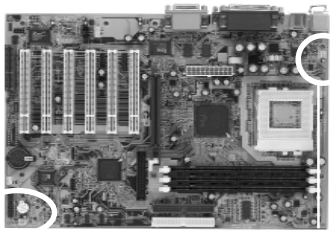
IR/CIR Connector (IR2)



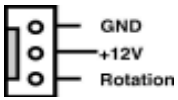
If you enable the IR/CIR Address Select in BIOS's Integrated Peripherals menu the IR/CIR port will let you select the IRQ and IR/CIR Mode to support IR/CIR functions.



CPU/System Cooling Fan Connectors (FAN1/FAN2)



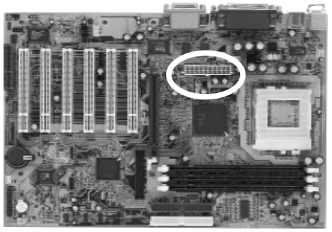
FAN2 FAN1



These added connectors allow the fan to draw their power from the mainboard instead of the disk drive connector.

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.

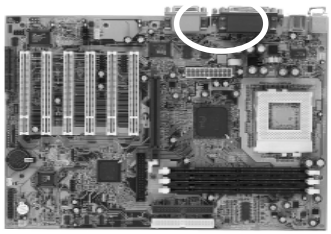
LTI-2 Riser (LTI1) Optional



This connector is to be connected to an optional TV-out/LCD/2nd CRT Output adapter card.

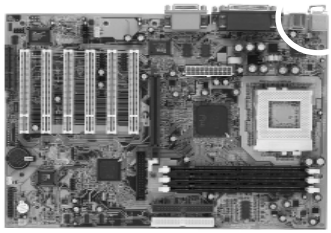
LTI-2 Panel link adapter for LCD/TV-out (Optional)

Optional COM2 Header (COM2)



Use the optional serial port cable enclosed with your mainboard. Plug into the header and attached the other end with the bracket to the system case back panel.

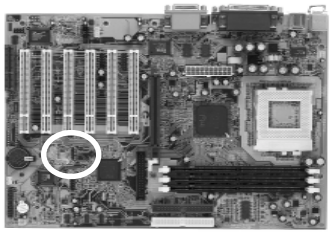
PS/2 Mouse and Keyboard Ports (PT1)



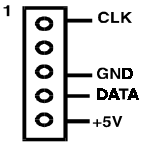
If a PS/2 mouse is used, BIOS will automatically detect and assign IRQ12 to the PS/2 mouse.

Pin	Definition
1	Data
2	No Connection
3	Ground
4	+ 5V (fused)
5	Clock
6	No Connection

Alert On LAN Connector (CN10)



Alert On LAN enabled LAN controller to report messages to a network management console without the aid of the system processor. This is crucial in cases where the processor is malfuntioning or cannot function due to being in a low power state. In order to use this function, the connector must be connected to a LAN card that support AOL feature.



2-5 Main Memory Configuration

The DRAM memory system consists of three banks and the memory size ranges from **32~512 MBytes**. It does not matter which bank you want to install first.

DRAM Specifications

FSB Freq. (MHz)	System Memory Bus Freq. (MHz)
66	100
100	100
133	100
133	133

DIMM type : 3.3V, unbuffered, registered, 64/72-bit SDRAM with SPD*

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

Parity : Either parity or non-parity

⚠ This mainboard supports up to 2 double sided or 3 single sided DIMMs at 133MHz system memory bus.

⚠ 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.

SPD (Serial Presence Detect)

This is an EPROM that contains speed and design information about the memory module. The mainboard queries the module and makes adjustments to system operation based on what it finds.

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 reboot 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.

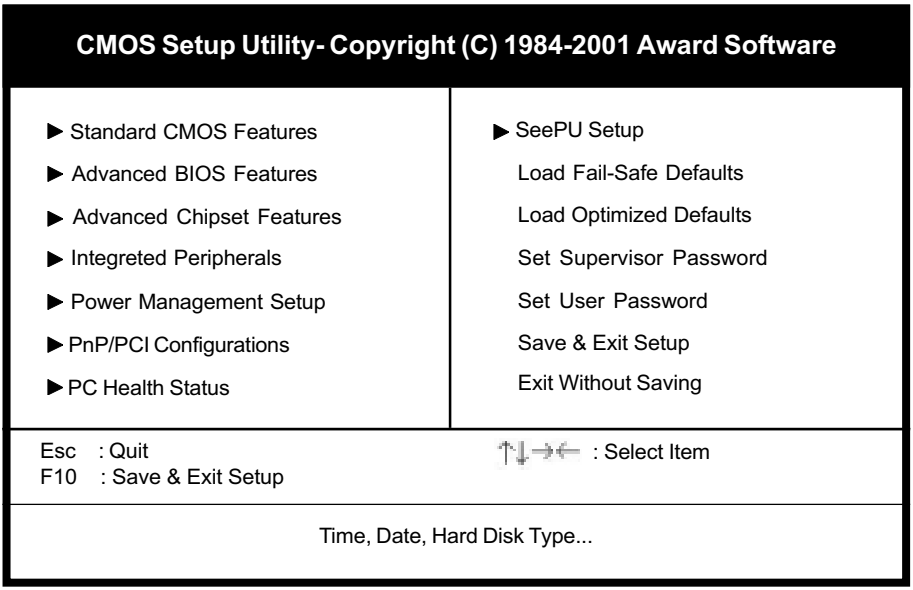


Figure 3-1 Setup Program Initial Screen

3-1 Standard CMOS Setup

The Standard CMOS Setup 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 left bottom edge of the screen.

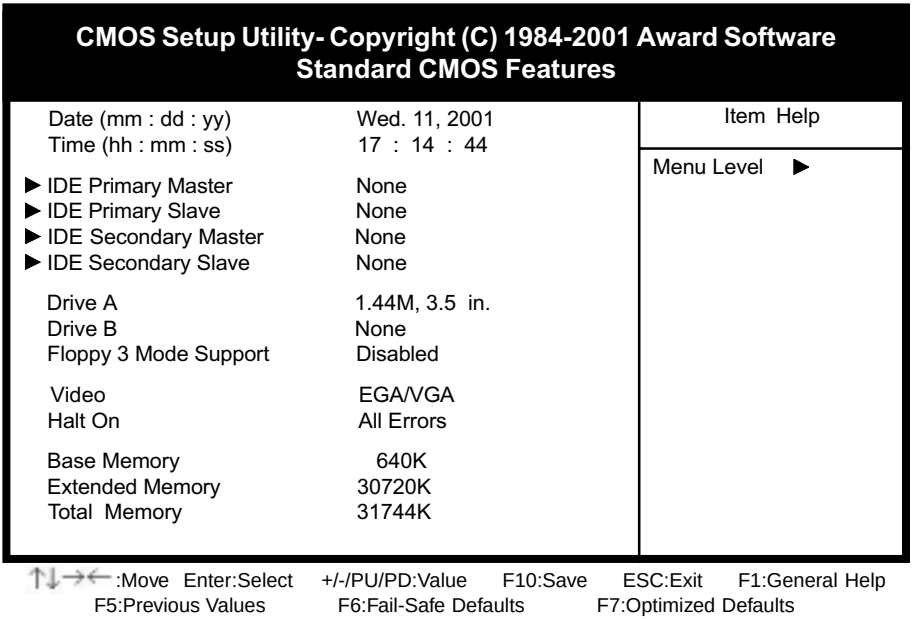


Figure 3-2 Standard CMOS Features Screen

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.

Type (Auto/User/None): Use the fields under the Type column to determine the method you will use to configure the IDE devices. If you choose Auto, BIOS will automatically detect and make optimal settings for most IDE hard drives.

The mainboard manufacturer recommends that you choose Auto for all drives.

Choose User to define your own drive type manually. You must enter values indicated in the table below into each drive parameter field. This information should be included in the documentation from your hard disk vendor or system manufacturer:

TYPE	Setting method
CYLS	Number of cylinders
HEAD	Number of heads
PRECOMP	Write precompensation cylinder
LANDZ	Landing zone
SECTOR	Number of sectors
MODE	Mode type

Table 3-1 Hard Disk Drive Parameters

Cyls/Head/Sector: The number of Cylinders, Heads, and Sectors can usually be found written on the top of the hard disk. If you have a relatively new hard drive, entering this information alone is usually sufficient for normal hard disk operation. The hard disk will not work properly if you enter improper information for these categories.

Precomp: Older hard drives (i.e., MFM or RLL drives) have the same number of sectors per track at the innermost tracks as at the outermost tracks. Thus, the data density at the innermost tracks is higher and the bits are lying closer together. Even though the physical size of a sector gets progressively smaller as the track diameter diminishes, each sector must still hold 512 bytes. Write precompensation circuitry compensates for the difference in sector size by boosting the write current for inner track sectors.

Landz: This defines the address of the landing zone and is only used for older hard drives which do not have an auto-parking feature.

Mode: If the Type value is not None for any device, you must set the Mode value for that device. There are four different Mode values: Auto, Normal, Large, and LBA.

Auto - BIOS detects and enters the IDE drive type during bootup.

Normal - for IDE drives that meet the old IDE specification which support a maximum capacity of 528MB (1024 cylinders, 16 heads, and 63 sectors).

Large - for IDE drives that do not support LBA and have more than 1024 cylinders. Try this setting if your hard disk does not operate properly with

the LBA setting. Large mode is not supported by all operating systems, i.e., only certain versions of DOS support large mode.

LBA - (Large/Logical Block Addressing) With LBA, the IDE controller transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. This mode is for drives with greater than 1024 cylinders and between 528MB and 8.4GB in size. This protocol is the current common standard.

Choose None for Type if there are no IDE HDD devices in your system.

✍ You can use the IDE HDD Auto Detection function to auto detect your hard drive parameters. Using this function will automatically insert the parameters discussed under Hard Disk Setup and will indicate User for the Field value. Please see Section 3-9 for more information.

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 diagnotic 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.

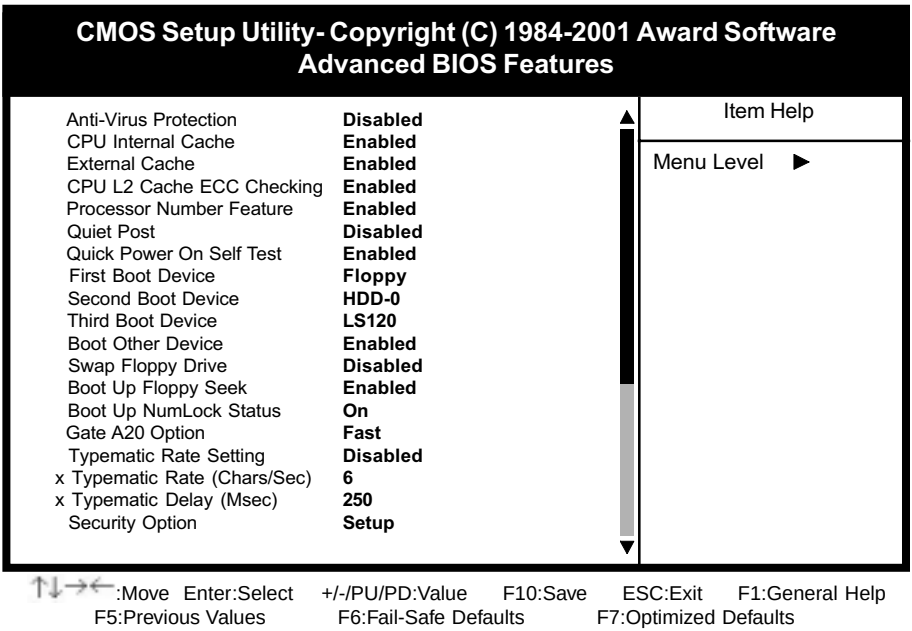


Figure 3-3 Advanced BIOS Features Screen

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 initializations 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 bootup 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 inlcude 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 numberpad as number keys or arrow keys.

D. Gate A 20 Option

Gate A20 refers to the way the system addresses memory above 1 MB (extended memory). When set to Fast, the system chipset controls Gate A20. When set to Normal, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows.

3-3 Advance Chipset Features

E. 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.

F. 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.

G. 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.

H. HDD Instant Recovery

This board supports HDD Instant Recovery, select enabled to use this function. Upon system boot up, the HDD Instant Recovery Utility will be shown on the screen. Selet **Install** or **Do Not Install** to continue booting (See Appendix II).

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**.**

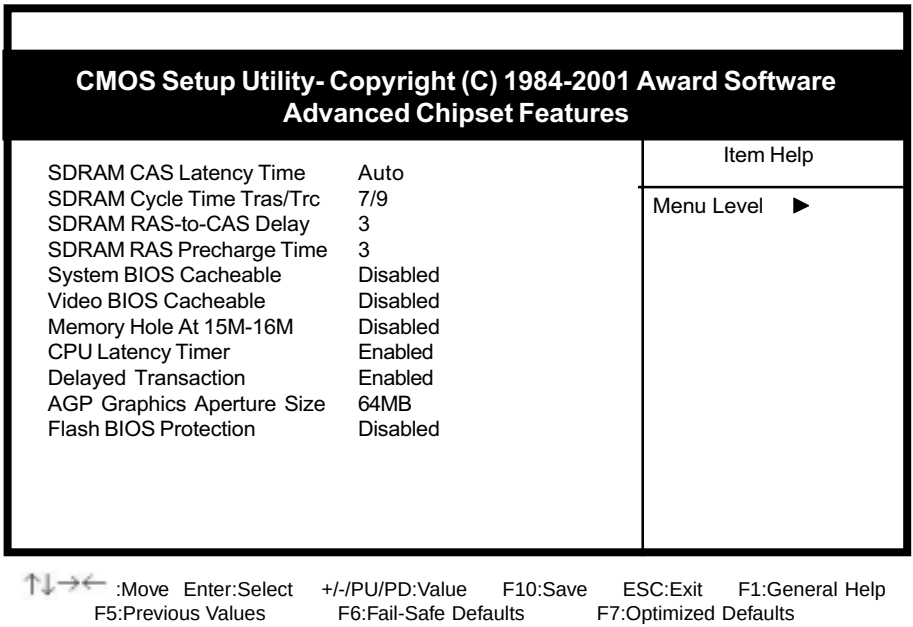


Figure 3-4 Advanced Chipset Features Screen

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 athttp://www.award.com.

A. 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.is enabled. If Auto Configuration is enabled, you must set the DRAM timing function to 60ns or 70ns, depeding on the type of DRAM you install.

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.

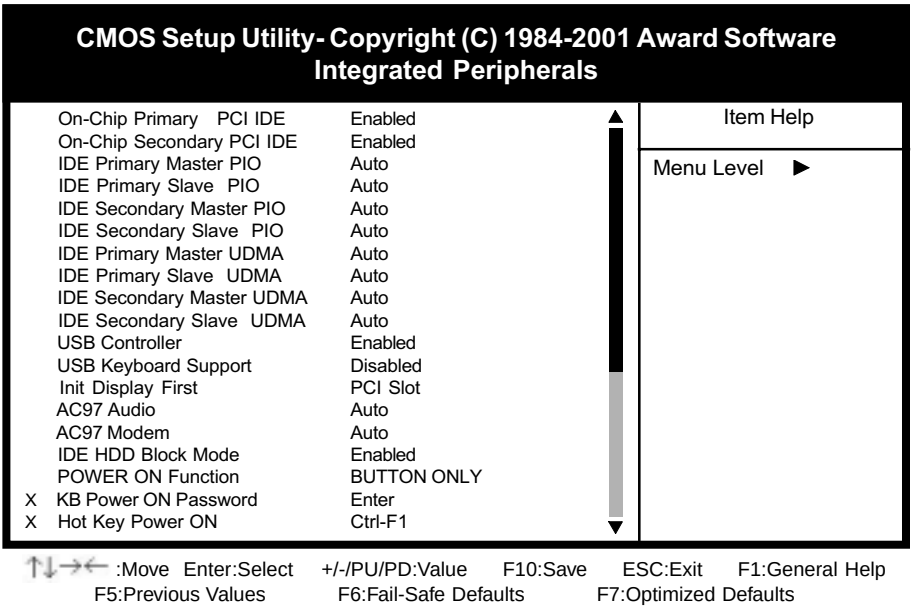


Figure 3-5 Integrated Peripherals Screen

A. On Board IDE Control

On-chip Primary/Secondary PCI IDE

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. USB Keyboard Support

If your current operating system doesn't support USB drivers (i.e., DOS) this function must be enabled for USB keyboard operation in these operating systems.

C. Init Display First

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

D. AC97 Audio

Select Enabled if you install the audio riser card.

E. AC97 Modem

Select Enabled if you install the soft modem riser card.

F. 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.

G. Power On Function

Set to Button Only to control the system power via the button on your system case. Set to Mouse Left/Right Click to turn on the power via a PS/2 mouse, and set to Keyboard 98, Hot Key or Password to turn on the power via keyboard. With Hot Key and Password you must decide on which keys will turn on the power.

H. Onboard FDC 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.

I. COM2 Mode Select

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

J. Onboard Parallel Port

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

3-5 Power Management Setup

This section provides information on the Green PC power management funtcions. 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

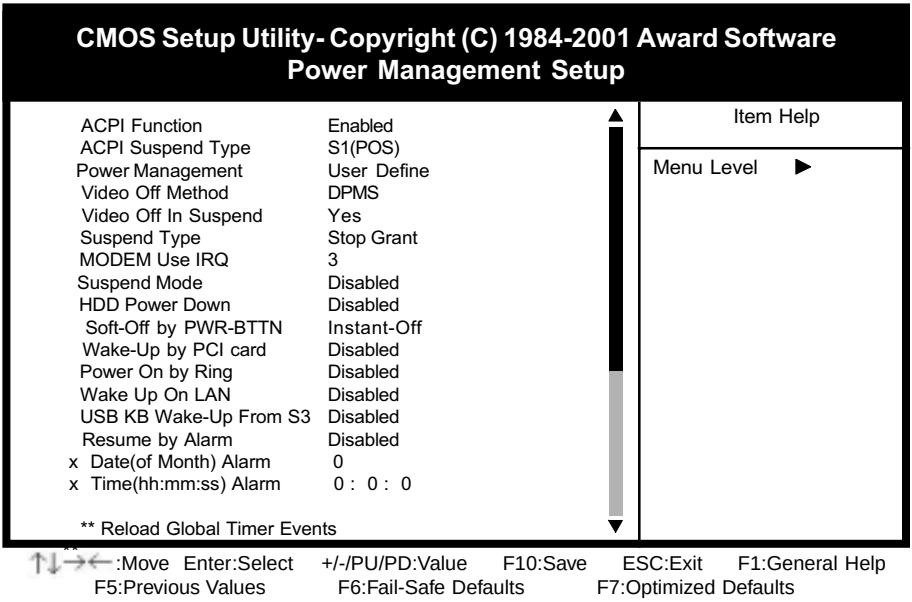


Figure 3-6 Power Management Setup Screen

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.

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 Supported - 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 your video subsystem to set video power management options.

C. 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 Supported - 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 your video subsystem to set video power management options.

D. Video Off In Suspend

This setting determines when the monitor enters power saving mode. If set to Yes, the monitor enters the power saving mode after the chosen event expires. The Power Management function must be enabled to use this function.

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. Suspend Mode

The Power Management function must not be set to disabled to enable this function. If the system runs in Standby mode and the Suspend timer expires, all devices regulated by power management will shut off and the CPU speed will be 0 MHz.

G. HDD Power Down

The Power Management function must not be set to disabled to enable this function. When the HDD idle time has elapsed, BIOS sends a command to the hard disk to turn off the motor. Set a time between 1 and 15 to indicate time required to wait before the hard drive enters a power saving mode. Some old hard drives may not support this function.

H. Soft-Off by PWR-BTTN

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 over-ride power button operation wich puts the system in Suspend mode. When set to Instant-Off the Soft-Off by PWR-BTTN function is disabled and the computer turns completely off when the power button is pressed.

I. Power On By Ring

When enabled, a modem that receives a ring 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.

J. Wake Up On LAN

Enable this selection to use the Wake Up On LAN function discussed in Section 2-4 of this manual.

K. Resume 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 Control 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.

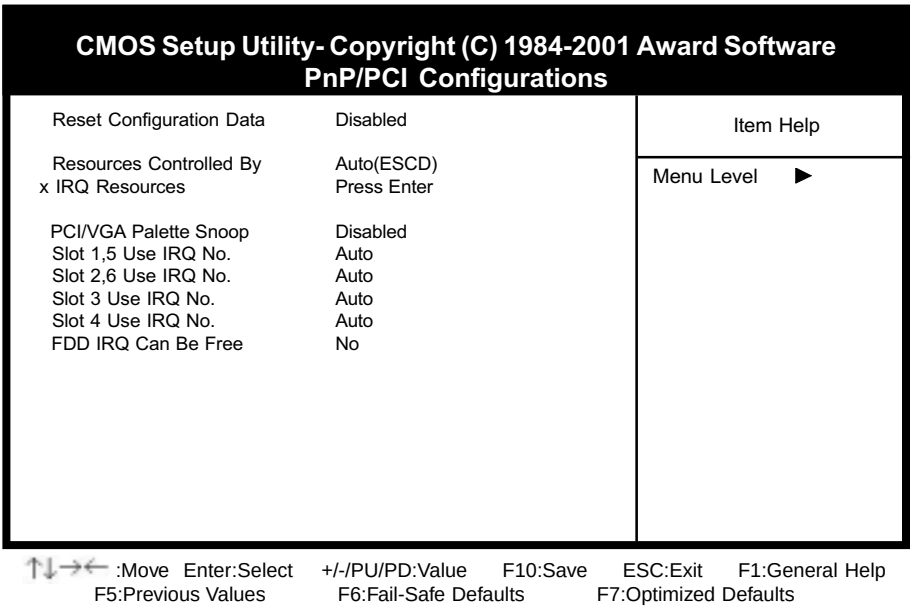


Figure 3-7 PnP/PCI Configurations Screen

A. 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.

B. 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 No 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.

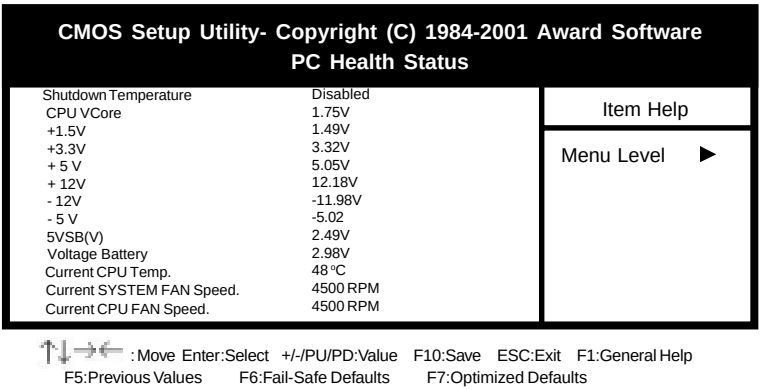


Figure 3-8 PC Health Status Screen

3-8 SeePU Setup

By choosing the **Seepu** Setup 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**.**

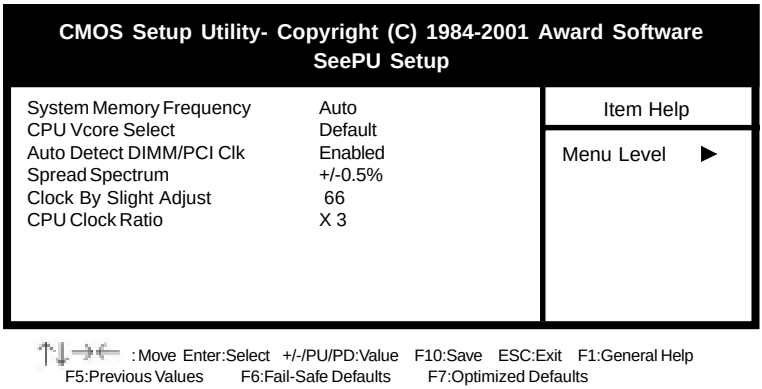


Figure 3-9 SeePU Setup Screen

A. Clock By Slight Adjust

This field allows you to select a subtle speed of the CPU Front Side Bus for overclocking posibility.

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.

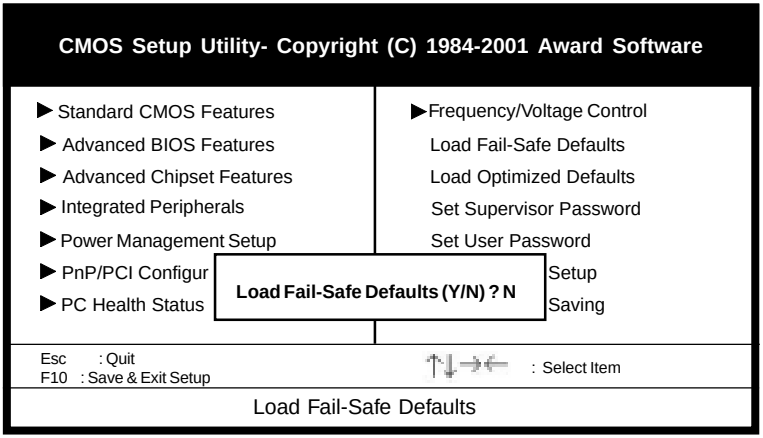


Figure 3-10 Load Fail-Safe Defaults Screen

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.

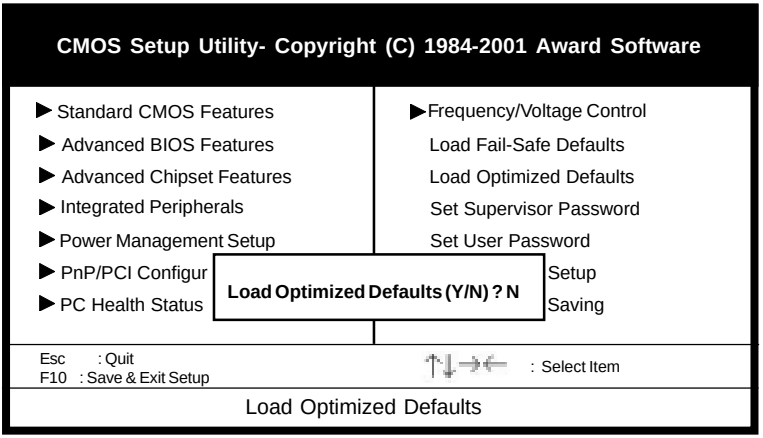


Figure 3-11 Load Optimized Defaults Screen

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.

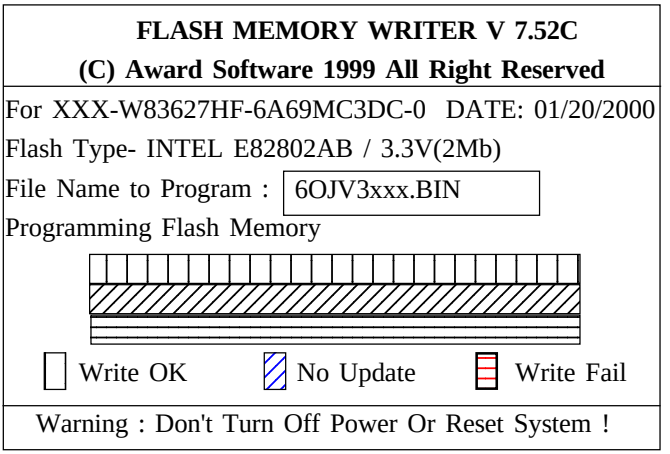
Appendix I

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 aviod confusion.

Appendix II

HDD Instant Recovery Utility

This mainboard is equipped with HDD Instant Recovery utility embedded in the BIOS ROM. The feature is an option which allows the user to install or not. HDD Instant Recovery utility is a Pre-O.S. backup technology that provides backup before any OS is being activated. Just one press on the Hotkey, HDD Instant Recovery can revive your system even if your O.S. crashed or not working properly.

❒ HDD Instant Recovery Concept

HDD IR will save your vital O.S. and application software in a hidden space inside the same hard drive. Since the backup file occupies some space in the hidden directory, the displayed disk space will be reduced. HDD IR will backup your system either with the Smart or Equivalent Backup depends on your O.S. type.

Smart Backup (FAT16/32 format i.e.Win 95/98 O.S.)

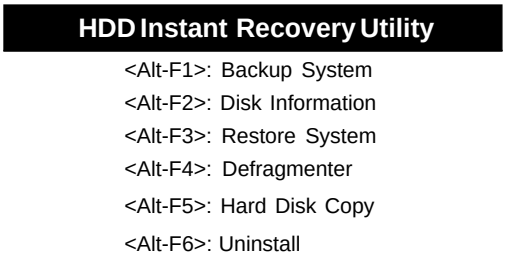
- Backup space is the actual system space used.

Equivalent Backup (NTFS format i.e.Windows 2000/NT.)

- Backup space equivalent to the drive space where the O.S. located.

❒ Utility Installation

1. Enable the HDD Instant Recovery in the BIOS Features setup from the CMOS Setup Utility menu. Save and exit to reboot.
2. Upon system boot up, the HDD Instant Recovery Utility will be shown on the screen. Selet **Install** and press Enter key to read the instruction.
3. Press **F8** key to continue, you will be prompt to confirmed to keep original data.
4. Type **Y** and press Enter and wait for the installation process to finish and the system will automatically reboot.



HDD Instant Recovery Utility Setup screen

❒ Backup System

Smart Backup

1. Upon system boot up, the HDD Instant Recovery Utility will be shown on the screen. Selet Backup System by pressing **Alt+F1** key.
2. Select your hard drive to backup.
3. Wait for the backup process to finish and the system will automatically reboot.

Equivalent Backup

✍ Still under evaluation testing for future Windows 2000/NT supports.

❒ Disk Information

1. Upon system boot up, the HDD Instant Recovery Utility will be shown on the screen. Select Disk Information by pressing **Alt+F2** key to view Disk Info.

❒ Restore System

1. Upon system boot up, the HDD Instant Recovery Utility will be shown on the screen. Selet Restore System by pressing **Alt+F3** key.
2. You will be prompt to confirmed restore drive. Type **Y** and press **Enter** key.
3. Wait for the backup process to finish and the system will automatically reboot.

❒ Defragmenter

1. Upon system boot up, the HDD Instant Recovery Utility will be shown on the screen. Selet Defragmenter by pressing **Alt+F4** key.
2. You will be prompt to confirmed defragment your drive. Type **Y** and press **Enter** key.
3. Wait for the defrgmentation process to finish and the system will automatically reboot.

❒ Hard Disk Copy

1. Upon system boot up, the HDD Instant Recovery Utility will be shown on the screen. Selet Hard Disk Copy by pressing **Alt+F5** key.
2. Select which hard drive to backup.(Copy 1 to 2 or 2 to 1 or 1 to 2 3 4)
3. Wait for the hard disk copy process to finish and the system will auto reboot.

❒ Uninstall

1. Upon system boot up, the HDD Instant Recovery Utility will be shown on the screen. Selet uninstall by pressing **Alt+F6** key.
2. You will be prompt to confirmed uninstall. Type **Y** and press **Enter** key.
3. Wait for the uninstalling process to finish and press any key to reboot

⚠ This function does not support Multi-Booting management utility like System Commander, etc.

⚠ Always uninstall this function before you format or partition the hard disk for other usage.

Appendix III

TwinBIOS Technology (Optional)

Introduction

We are pleased to introduce the Peer to Peer **TwinBIOS** technology, a new generation BIOS system for your motherboard. Twin BIOS are physically two BIOS chips, known as BIOS 1 and BIOS 2. If either one of the BIOS fails, the other BIOS will be ready to take over the Boot BIOS function. Whether the problem is caused by a virus, flashing BIOS failure or a corrupted Boot BIOS chip, The other BIOS will always back you up.

❒ Using the Backup BIOS Recovery

This feature enable you to manually shift to another BIOS once the BIOS fails to boot. Set the (BIOS Boot Selector) jumper pin to 2-3 and then press the reset button together with the power on button to boot up.

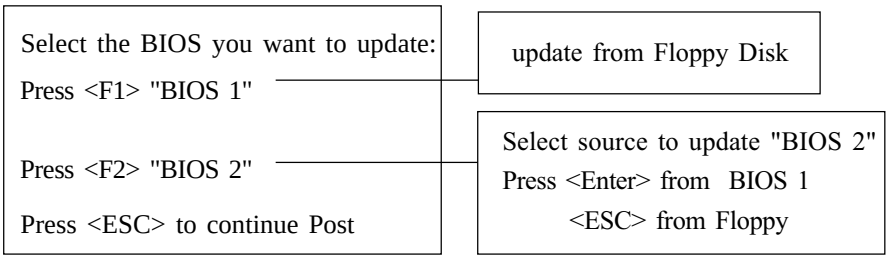
❒ Selecting Boot BIOS

Set the (BIOS Boot Selector) jumper pin to 1-2 to enable BIOS selection in the Advance BIOS Features setup from the CMOS Setup Utility menu. Select Boot BIOS and choose between BIOS 1 (default) or BIOS 2 option to boot your system.

❒ Update BIOS Using Embbeded Flash Memory Utility

A. Boot from BIOS 1

1. Start computer, upon post, press ALT+F2 Keys to enter AWDFLASH setup.

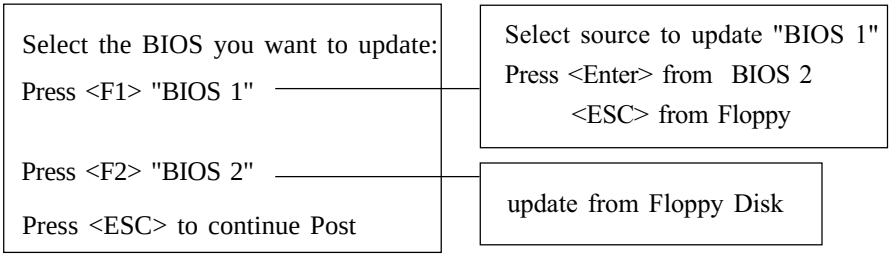


Note:

- 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.

B. Boot from BIOS 2

1. Start computer, upon post, press ALT+F2 Keys to enter AWDFLASH setup.



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.

Appendix IV

CMedia 8738 Audio Subsystem

The CMedia 8738 offers a new generation PCI audio solution: it utilizes the state-of-the-art CRL® 3D Audio technology (HRTF 3D positional audio), and supports Microsoft® Direct Sound®3D and Aureal®'s A3D® interfaces. Better yet, it supports two/four/six speakers and DLS based (Down Loadable Sound) wave table music synthesizer which supports the Direct Music®.

Feature

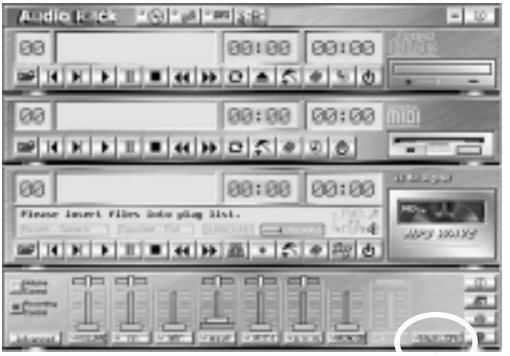
- Advanced 64-voice wavetable synthesizer
- Programmable independent sample rate form 4KHz to 48KHz for record and playback
- Full-duplex operation for simultaneous recording and playback
- Supports MS DLS (Downloadable sample) level-1 technology with limitless variety of instrument samples using PC RAM
- Supports HRTF 3D positional audio with MSDS, DS3D, DirectMusic, Aureal A3D and Creative EAX (Environment Audio Extensions), C3DX APIs
- 6-Channel speaker audio support is easy to build up a Home Theater environment
- Supports Fiber Optic module for Internet music, PC, and MD connections
- Supports MIDI and dual game ports
- Embedded 32OHM .5w earphone amplifier

6 Speakers System

The CMedia 8738 Audio subsystem provides 3 wave channels (front/rear/center+bass), known as the 6 speakers system. When games or application programs via DirectSoundR 3D or A3DR interface locate the sound sources to the listener's back, the two rear speakers will work to enhance the rear audio positional effect, so as to complement the insufficiency of using only two front speakers to emulate the audio effect. The following is the hardware installation and the software setups:

Installation

1. Connect the front pair speakers to the Line-out jack of the audio adapter, and then connect rear pair speakers to Line-in/Rear jack of the audio adapter. The original Line-in can be moved to Aux-in.
2. Install the audio driver and Audio Rack application software(see chapter 4).
3. There is a multi speakers option in the volume control of the mixer, and when you enable this option, it means the rear speakers are connected to Line-in/Rear jack. When Line-in/Rear jack is connected to other external Line-in sources, please DO NOT enable this option in order to avoid hardware conflicts. Regarding rear speaker option, you can turn **ON** or turn **OFF** the output of the back speakers, and adjust the volume, to have the rear/front speakers have the same volume.



Multi Speaker selector Button

Note: You can test your multi-channel system by clicking the Multi-Channel Audio Demo at C:\WINDOWS\Start Menu\Programs\PCI Audio Application\Multi-Channel Audio Demo(as shown in figure below).