# FC

# *Declaration of Conformity*

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

The following designated product:

**EQUIPMENT: MAINBOARD**

**MODEL NO. : 6OIV**

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 COMPUTER U.S., INC.**

**509 Valley Way, Milpitas, CA 95035, U.S.A.**

**Tel: 1-408-935-6988**

**Fax: 1-408-935-6989**

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

The information in this document is subject to change without notice and does not represent a commitment on the part of the vendor. No warranty or representation, either expressed or implied, is made with respect to the quality, accuracy or fitness for any particular purpose of this document. The manufacturer reserves the right to make changes to the content of this document and/or the products associated with it at any time without obligation to notify any person or organization of such changes. In no event will the manufacturer be liable for direct, indirect, special, incidental or consequential damages arising out of the use or inability to use this product or documentation, even if advised of the possibility of such damages. This document contains materials protected by copyright. All rights are reserved. No part of this manual may be reproduced or transmitted in any form, by any means or for any purpose without expressed written consent of it's authors. Product names appearing in this document are mentioned for identification purposes only. All trademarks, product names or brand names appearing in this document are registered property of their respective owners.

**JUNE 2000**

Printed in Taiwan

**100%** POST-CONSUMER RECYCLED PAPER

# Main Board
# User's  Manual

# Table of Contents

## Chapter 1

# Introduction

## 1-1 Product Specifications

❒ **Processor**
  - Supports up to Socket-370 Intel processors up to866MHz
  - Supports 66/100/133 MHz system clock speeds
  - High efficiency **Switching Power Module** (VRM v8.4 compliant)

❒ **Chipset**
  - Intel 815 three chip AGPset with integrated 2D/3D graphics controller

❒ **DRAM Memory**
  - Two 3.3V 168-pin DIMM sockets support up to 512MB
  - Supports PC-100/133 DIMMs at 100/133MHz FSB Freq.

❒ **Expansion Slots**
  - One **PCNR** slot for Soft audio modem riser only
  - Three 32-bit PCI slots with full master sharing controller(Rev 2.2 compliant)
  - One 32-bit AGP slot supports both 2xAGP/4xAGP(Rev 1.0 & 2.0 compliant)

❒ **4Mb Boot-Block Flash ROM**
  - Intel 4Mb 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.)

❒ **Embedded Ultra DMA-66 PCI IDE controller**
  - Supports two IDE ports up to 4 ATAPI devices
  - Supports up to PIO Mode 4 up to 16.6MBps, Multi Mode 4 up to 66MBps with bus mastering
  - Bus Master software drivers for all well known multi-task operating systems

❒ **Embedded Super I/O Functions**
  - W83627 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 $2^{nd}$ serial port
  - Supports Game/MIDI port (for soft-audio)

❒ **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
- 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

❒ **Embedded Audio Subsystem**
- AC`97 v2.1 compliant CODEC with integrated SRC

❒ **Embedded 3D AGP VGA**
- 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 LTI-II slot for Panel Link LCD monitor and TV out

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

❒ **Embedded USB Controller**
 - USB host controller (UHCI v1.0 compliant) with Root Hub

❒ **Board Dimensions**
 - Standard ATX form factor, 244mm 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

- Poly-fuse over-current protection with error warning for keyboard circuitry
- ACPI STR (Suspend to RAM ) ready !
- Chassis intrusion detection with mnemonics during power loss
- Optional hardware audio provides full DOS S/W compatibility to support legacy gaming and educational markets
- Advanced Management Features**:**
  * Power-on events:
    WOL(Wake-on-LAN) network card, Modem ring, RTC Alarm
  * Software power-off control for Win98
  * Over-ride power button
  * Three states advanced Power-failure recovery: Always On, Always Off, Last state
  * Blinking Power-LED in suspend
  * Hardware Reset Protect
- System lockup recovery
  * Once software or hardware lockups, system will causes an SMI# or a system reset to recover from system hang
- 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.

## 1-3 Package Contents

This product comes with the following components:

❐ One mainboard

❐ One 40-pin Ultra DMA-66 IDE connector ribbon cable (Figure 1-1)

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

     Blue to mainboard, Gray to Master and Black to slave

❐ One 34-pin floppy disk drive ribbon cable (Figure 1-2)

❐ Optional **LTI-II** Panel link adapter for LCD/TV-out( Figure 1-3)

❐ Optional **COM2 Cable**( Figure 1-4)

❐ One User's Manual

❐ One CD-ROM that includes

   - Award Flash EPROM Utility

   - Award DMI Utility for DOS

   - Intel Bus Master IDE drivers for Win95/98

   - Intel Security Driver

   - Audio drivers for Win31, Win9x, NT4.0, Win2000 and Linux

   - Optional **Value Pack 2000** software group including Acrobat Reader, Shepherd2000, Trend PC-cillin, Norton AntiVirus, ADOBE ActiveShare, Appio and X-stop
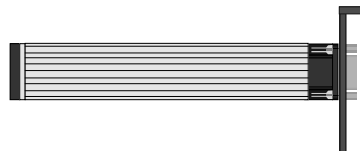


**Figure 1-1** UDMA66 IDE cable
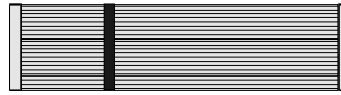


**Figure 1-2** Standard Floppy cable



**Figure 1-3** LTI-II Riser Card



**Figure 1-4** COM2 Cable (Optional)

*Memo*

# 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.
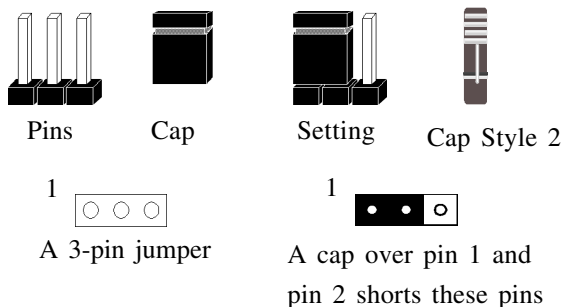
Pins          Cap          Setting          Cap Style 2

1
◯ ◯ ◯
A 3-pin jumper

1
● ● ◯
A cap over pin 1 and
pin 2 shorts these pins

**Figure 2-1**

## 2-2 Installing a  CPU in a Socket 370

The Intel Socket 370, designed for the Celeron and Coppermine 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 SeePU Setup menu and press Enter.  Find the System Memory 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. Select the CPU bus frequency according to your processor's specifications and then select the correct CPU ratio.

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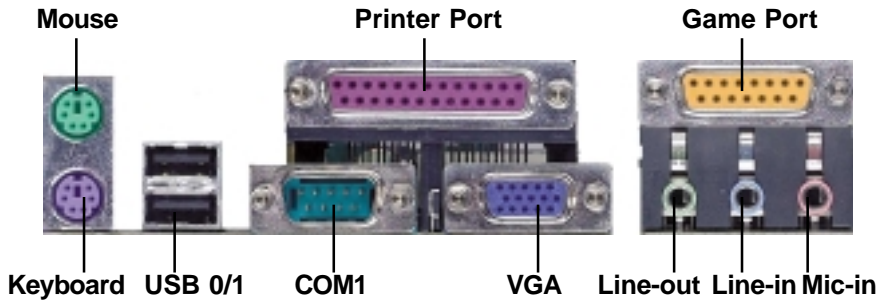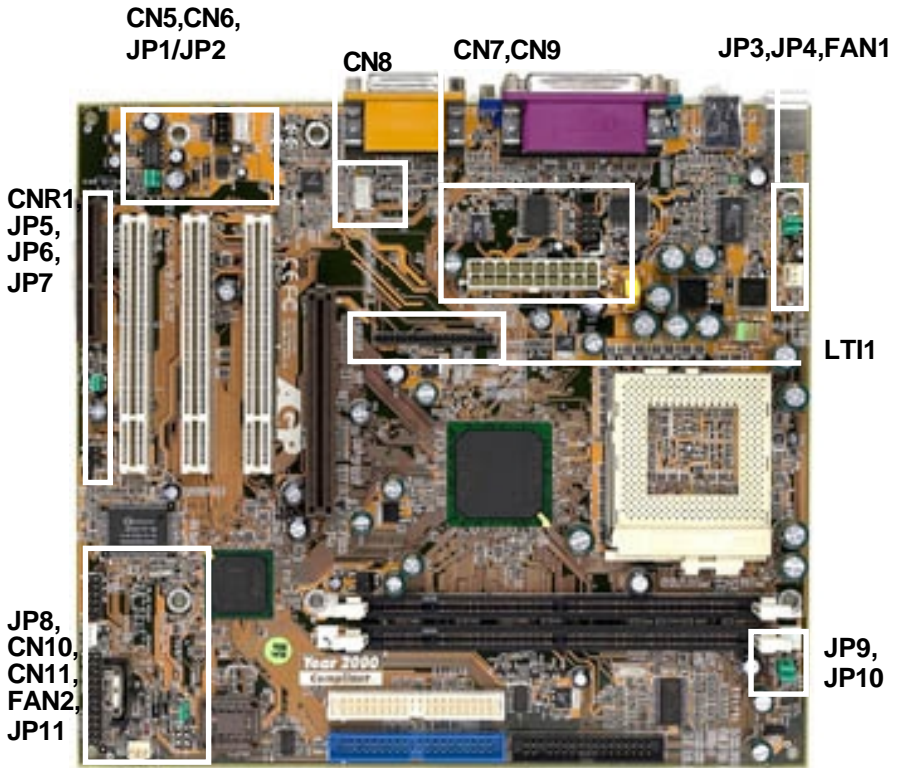
    You do not need to make voltage settings because *SeePU* automatically sets your CPU voltage.
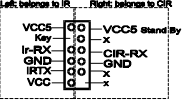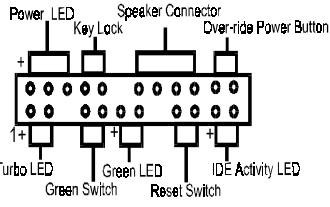
# ⚠ Overclocking

Operating a CPU at a higher frequency than it's specification allows is called overclocking. If the CPU frequency is set at a higher frequency than it's specification allows, it may or may not run at that frequency, depending on the quality of your CPU and the extent to which the frequency has been overset. The mainboard manufacturer highly discourages overclocking as it may result in data loss, CPU burnout, system failure, etc.

Many Intel processors are frequency locked processors and are not able to perform overclocking. Regardless of whether the processor is a frequency locked, overclocking may cause some processors to hang when turning on the system. When the processor hangs, the screen remains blank and the system does not boot. To solve this problem, do the following.

1. Turn off the computer and then press and hold the Home key on your keyboard

2. Turn on your computer, wait for five seconds and then release the Home key.
3. Enter BIOS and reconfigure your CPU parameters as described in this section.

**CN5,CN6,**
**JP1/JP2**

**CN8**

**CN7,CN9**

**JP3,JP4,FAN1**

**CNR1**
**JP5,**
**JP6,**
**JP7**

**LTI1**

**JP8,**
**CN10,**
**CN11,**
**FAN2,**
**JP11**

*Year 2000*
*Compliant*

**JP9,**
**JP10**

**Mouse**

**Printer Port**

**Game Port**

**Keyboard**   **USB 0/1**   **COM1**          **VGA**   **Line-out  Line-in  Mic-in**

| JP & CN No. | Function | JumperSetting/Connector | Page |
|---|---|---|---|
| JP1/JP2 | Audio Line out/ Speaker out | 1-2: Line out ; 2-3: Speaker out (default) | 15 |
| JP3 | PS/2 keyboard Power On Funtion | 1-2: Disable (default); 2-3: Enable | 15 |
| JP4 | USB Power On Function | 1-2: Disable(default); 2-3: Enable | 15 |
| JP5 | Primary Audio CODEC selector | 1-2: CODEC ; 2-3: AMR | 16 |
| JP6 | Chassis Intrusion Dectection |  | 16 |
| JP7 | Smart Bus Connector |  | 16 |
| JP8 | Infrared / Consumer Infrared |  | 17 |
| JP9/JP10 | System Bus Frequency Setting |  | 17 |
| JP11 | Clear CMOS Data | 1-2: Normal(default); 2-3: Enable (Clear) | 17 |
| CN1 | PS/2 Mouse and Keyboard Ports | | 18 |
| CN2 | USB (Universal Serial Bus) 0/1ports | | 18 |
| CN5 | Audio Mono-in/out Connector |  | 18 |
| CN6 | CD ROM Audio In Connector |  | 19 |
| CN7 | COM2 Connector | | |
| CN8 | AUX Audio In Connector |  | 19 |
| CN9 | ATX Power Supply Connector | | 12 |
| CN10 | WOL (Wake on LAN) |  | 19 |
| CN11 | Over-ride Power Button Connector |  | 12/13 |
| | Keyboard Lock & Power Indicator LED Connector | | |
| | Green Switch Connector/ Green  LED Connector | | |
| | System Reset Switch Connector | | |
| | Speaker Connector | | |
| | IDE Activity LED Connector | | |
| | Turbo LED Connector | | |
| FAN1/FAN2 | CPU/CASE Cooling Fan Connector |  | 20 |
| LTI1 | LTI-II Riser | | 20 |

Inside the JP9/JP10 setting table:

| FSB | JP9 | JP10 |
|---|---|---|
| Auto | 1~2 | 1~2 |
| 100MHZ | 1~2 | 2~3 |
| 133MHz | 2~3 | Open |

## 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 (CN9)

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.

| | | | | |
|---|---|---|---|---|
| 12V | ⑩ | ⑳ | 5V | |
| 5VSB | ⑨ | ⑲ | 5V | |
| PW-OK | ⑧ | ⑱ | -5V | |
| Ground | ⑦ | ⑰ | Ground | |
| 5V | ⑥ | ⑯ | Ground | |
| Ground | ⑤ | ⑮ | Ground | |
| 5V | ④ | ⑭ | PS-ON | |
| Ground | ③ | ⑬ | Ground | |
| 3.3V | ② | ⑫ | -12V | |
| 3.3V | ① | ⑪ | 3.3V | |

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 (CN11) A through F
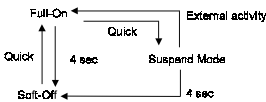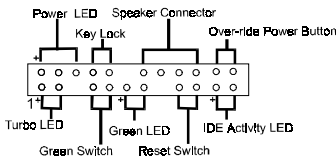






**Over-ride Power Button Operation**

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

Power Indicator LED

**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.)

## 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.
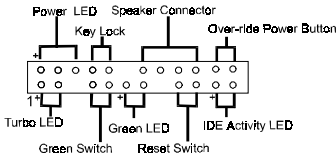
### C. Green Switch/Green LED Connector

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.

## Audio Line_out or Speaker_out (JP1/JP2)

JP1 $^1$ ▪▪ ◦    JP1 $^1$ ◦ ▪▪
JP2 ▪▪ ◦    JP2 ◦ ▪▪
 Line_out    Speaker_ out (default)

This jumper allows you to select between audio line-out or speaker out function. Set both JP2 and JP3 pins to 1-2 for line-out function or set both JP2 and JP3 pins to 2-3 for speaker out function..

## PS/2 Keyboard Power On Function (JP3)

$^1$ 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 (JP4)

$^1$ ▪▪ ◦    $^1$ ◦ ▪▪
Disable(default)    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.

## Primary Audio CODEC Selector (JP5)

1   ■■□  Onboard CODEC (Default)

1   □■■  CNR (Soft-Audio/Modem riser)

Short pin 1-2 to enable onboard AC`97 CODEC. Short pin 2-3 to enable CNR (Soft Audio/Modem riser).

## Chassis Intrusion Detection (JP6)

This board supports the chassis instruction monitoring feature of the management extension hardware by means of a mechanical or photo sensor switch attached to the motherboard through this 1x3-pin chassis security header. The mechanical switch is set to open for normal computer operation.

```
1 ○ — 5 Vsb
  ○ — CASE Open
  ○ — GND
```
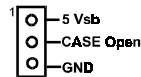
## Smart Bus Connector (JP7)

This connector supports Aux-input for connecting DVD or other audio devices.

```
1 ○ — SMCLK
  ○ — GND
  ○ — SMBDAT
  ○ — VCC5
```
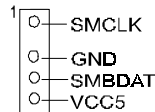
## IR/CIR Connector (JP8)

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.

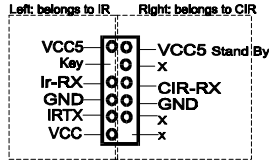Left: belongs to IR     Right: belongs to CIR

```
VCC5 ─────┤O O├───── VCC5 Stand By
  Key ─────┤ O├───── x
Ir-RX ─────┤O O├───── CIR-RX
 GND ─────┤O O├───── GND
 IRTX ─────┤O O├───── x
 VCC ─────┤O O├───── x
```

## CPU Bus Frequency (JP9/JP10)

| FSB | JP9 | JP10 |
|--------|-----|------|
| Auto | 1~2 | 1~2 |
| 100MHZ | 1~2 | 2~3 |
| 133MHz | 2~3 | Open |

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.

## Clear CMOS Data (JP11)

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.

## PS/2 Mouse and Keyboard Ports (CN1)

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 |

## USB 0/1Ports(CN2)

If you want to use a USB keyboard, you must enable the USB keyboard support function in BIOS's Integrated Peripherals menu. 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 ports. Two USB peripherals or hub devices are able to be connected.
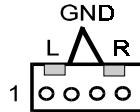
## Audio Mono-in/out Connector (CN5)

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.
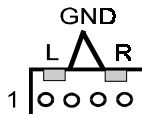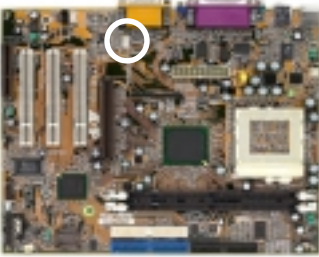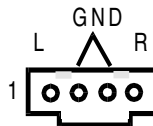
## CD-ROM Audio-in Connector (CN6)

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 CD-ROM Audio-in Connector (CN8)

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.

## WOL (Wake-on-LAN) Connector (CN10)

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.
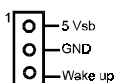
## CPU/CASE Cooling Fan Connectors (FAN1/FAN2)
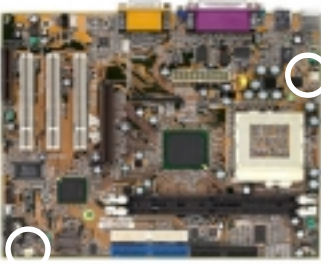


These added connectors allow the fan to draw their power from the mainboard instead of the disk drive connector.

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 3500 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.

GND
+12V
NC

## LTI-II Riser (LTI1) Optional



This connector is to be connected to an optional TV/LCD/2nd CRT Output adapter card.
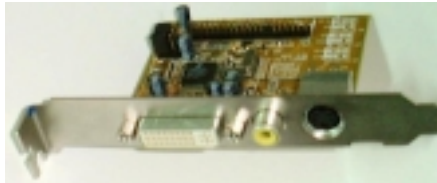
# 2-5 Main Memory Configuration

The DRAM memory system consists of three banks and the memory size ranges from **16~512 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 16/32/64/128/256 MBytes

Parity        : Either parity or non-parity

▽! This mainboard supports up to 2 double sided or 2 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.

## ECC DRAM Capability
**This mainboard can be configured to support ECC (Error Check and Correct) function when utilizing parity DIMM modules.** To utilize the chipset's ECC features, you must use a 72-bit DIMM module. These modules are automatically detected during bootup. However, the user must configure the DRAM Data Integrity Mode to "ECC" in BIOS's SeePU&Chipset Features Setup menu to enable the ECC function. ECC detects double bit errors and detects and corrects single bit memory errors on the fly without user intervention. Errors may be generated by a defective memory module, conflicting memory speeds between different banks, DMA, etc.
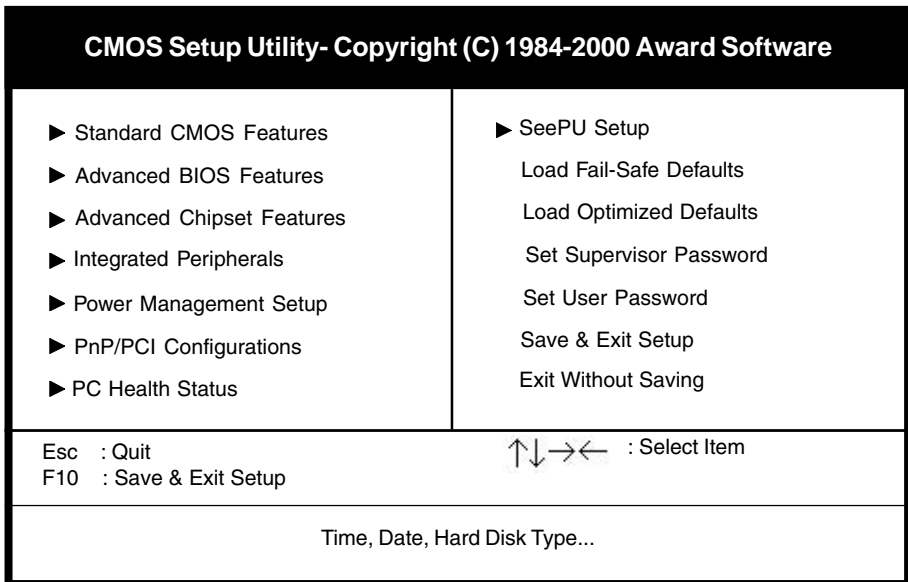
# *Memo*

# 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 right side of the screen.

---

**CMOS Setup Utility- Copyright (C) 1984-2000 Award Software**

▶ Standard CMOS Features

▶ Advanced BIOS Features

▶ Advanced Chipset Features

▶ Integrated Peripherals

▶ Power Management Setup

▶ PnP/PCI Configurations

▶ PC Health Status

▶ SeePU Setup

Load Fail-Safe Defaults

Load Optimized Defaults

Set Supervisor Password

Set User Password

Save & Exit Setup

Exit Without Saving

---

Esc : Quit
F10 : Save & Exit Setup

↑↓→← : Select Item

Time, Date, Hard Disk Type...

---

**Figure 3-1 Setup Program Initial Screen**

# *Memo*

# Chapter 4

# Brief Software Driver Guide

The Mainboard Software Guide is found on the CD-ROM that is enclosed with your mainboard and is a PDF file which must be viewed with Adobe's freeware called Acrobat® Reader. The Acrobat Reader software is also included on the same CD-ROM. See the Readme.txt file in the CD-ROM's root directory for installation instructions of the Acrobat Reader. The Mainboard software guide discusses the following items:

The following items are discussed in the TXT or PDF files:

- Bus Master/PIO IDE Driver Installation
- USB Driver Installation
- Updating Your System BIOS
- Installing and Using a Desktop Management Interface (DMI) Utility for DOS
- Sound Drivers and Utility Installation
- AGP VGA Drivers for Win95/98/2000/NT

The DMI utility is a DOS utility, operating under Windows or other operating system might cause damage to the BIOS.

# *Memo*

# On Board I/O Addresses & IRQ Maps

| System Resource | IRQ | I/O Address |
|---|---|---|
| 1.  Timer | IRQ0 | 040, 043 |
| 2.  Keyboard | IRQ1 | 060, 064 |
| 3.   Programmable INT | IRQ2 | 0020, 0021, 00A0, 00A1 |
| 4.  COM2(B) | IRQ3 | 2F8, 2FF |
| 5.  COM1(A) | IRQ4 | 3F8, 3FF |
| 6.  Floppy | IRQ6 | 3F0, 3F7 |
| 7.  LPT1 | IRQ7 | 378, 37F |
| 8.  Real Time Clock | IRQ8 | 070, 071 |
| 9.  PS/2 Mouse | IRQ12 | 060, 064 |
| 10. Math coprocessor | IRQ13 | 0F0, 0FF |
| 11. IDE 1 | IRQ14 | 1F0, 1F7 |
| 12. IDE 2 | IRQ15 | 170, 177 |

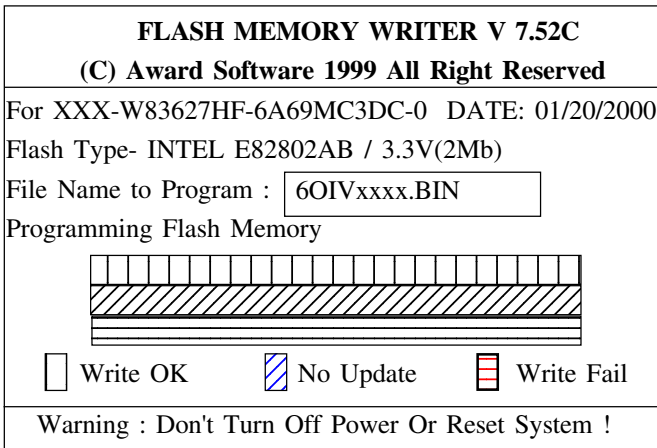☞**IRQ 5, 9, 10 and 11 are available for interface cards.**

**Memo**

# 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.

| **FLASH MEMORY WRITER V 7.52C** |
|:---:|
| **(C) Award Software 1999 All Right Reserved** |
| For XXX-W83627HF-6A69MC3DC-0  DATE: 01/20/2000 |
| Flash Type- INTEL E82802AB / 3.3V(2Mb) |
| File Name to Program :  6OIVxxxx.BIN |
| Programming Flash Memory |
| ☐ Write OK    ▨ No Update    ⊟ Write Fail |
| Warning : Don't Turn Off Power Or Reset System ! |

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 confussion.

# *Memo*