SC-5EH5

SURIA ETEQ Chipset AT, PCI Mainboard
User's Guide & Technical Reference

Table of Contents

1   Introduction

The EQ82C663X PCI mainboard is a high-performance AT form-factor system board that supports P54C/P55C family CPUs. This mainboard is fully compatible with industry standards and adds many technical enhancements.

Key Features

- CPU
    - Supports P54C/P55C family CPUs running at 90~233 MHz speeds; Cyrix 6x86/6x86L/6x86MX CPUs running at PR150~PR266 speeds; and AMD K5/K6 CPUs running at PR90~PR233 and K6 3D speeds
    - Supports Socket 7 for upgrade
    - Supports P54C/P55C series SMM Mode and CPU Stop Clock
    - Supports **MMX** technology and Smart Detect CPU Voltage function
- Supports CPU overheat alarm function (70°C)
- L2 Cache Controller
    - On-board **512K/1M** Pipeline Burst SRAMs Cache
- DRAM Controller
    - Supports 2 strips of 72-pin FPM/EDO (4/8/16/32MB) SIMM (symmetrical/ asymmetrical addressing)
    - Supports **2 strips** of 168-pin FPM/EDO/SDRAM (**8/16/32/64/128 MB) 3.3V Unbuffered DIMM**
    - Memory configuration for DIMM is from 8MB to 256 MB; for SIMM is from 8MB to 64MB
- BUS Controller
    - Complies to PCI specifications v2.1
    - Three 32-bit PCI slots, three ISA slots, and **one AGP slot**
- Peripheral Controller
    - System BIOS built-in NCR810 SCSI Card BIOS and "Plug and Play" function
    - Onboard PCI Master IDE controller and floppy controller
    - Onboard super I./O chip supports two high speed UARTS (w/i 16550 FIFO), one ECP/EPP/SPP multi-mode parallel port, and one PS/2 mouse port
    - **Onboard FLASH Memory for easy upgrade BIOS**
    - Easy installation of ETEQ E-IDE/ATAPI Bus Master Drivers included on CD
    - Supports IR connector
    - **Supports Universal Serial Bus (USB)**
    - AT/ATX power suply connectors available.

Unpacking the Mainboard

The mainboard package contains:
• The EQ82C663X Mainboard
• One CD (including User's Manual, Drivers, and Utilities)

Note: Do not unpack the mainboard until you are ready to install it.

Follow the precautions below while unpacking the mainboard.
1.   Before handling the mainboard, ground yourself by grasping an unpainted portion of the system's metal chassis.
2.   Remove the mainboard from its anti-static packaging and place it on a grounded surface, component side up.
3.   Check the mainboard for damage. If any chip appears loose, press carefully to seat it firmly in its socket.

Do not apply power if the mainboard appears damaged. If there is damage to the board contact your dealer immediately.

Electrostatic Discharge Precautions

Make sure you ground yourself before handling the mainboard or other system components. Electrostatic discharge can easily damage the components. Note that you must take special precaution when handling the mainboard in dry or air-conditioned environments.

Take these precautions to protect your equipment from electrostatic discharge:
• Do not remove the anti-static packaging until you are ready to install the mainboard and other system components.
• Ground yourself before removing any system component from its protective anti-static packaging. To ground yourself grasp the expansion slot covers or other unpainted portions of the computer chassis.
• Frequently ground yourself while working, or use a grounding strap.
• Handle the mainboard by the edges and avoid touching its components.

Mainboard Layout w/ Default Settings
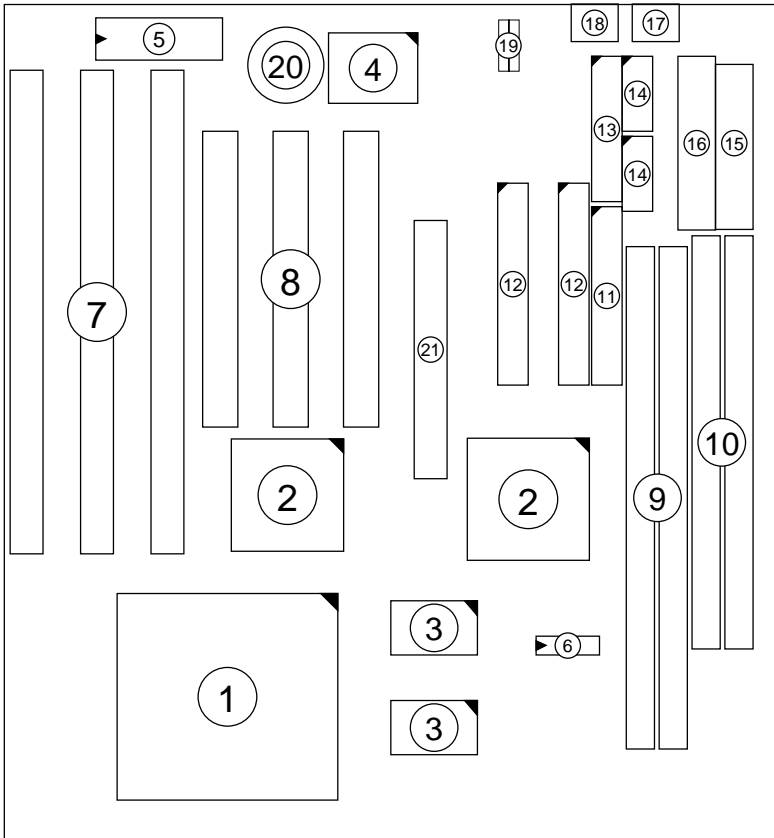
Figure 1–1. Mainboard Layout

1. ZIF socket 7
2. EQ82C663X Chipset
3. Pipelined Burst SRAM
4. Super I/O
5. PnP FLASH BIOS
6. TAG SRAM
7. ISA Slots
8. PCI Slots
9. Unbuffered DIMM Banks
10. SIMM Banks
11. Floppy Connector

12. IDE1/IDE2 Connectors
13. Parallel Port Connector
14. COM1/COM2 Connector
15. ATX Power Connector
16. AT Power Connector
17. KB Connector
18. PS/2 Mouse Connector
19. USB Connectors
20. 3 Volt. Lithium Battery
21. AGP Port

Default settings are as follows: Pentium 133MHz CPU, 512K Pipelined Burst cache, On-board PCI E-IDE Enabled, 2 high speed UARTS Enabled (w/ 16550 FIFO), 1 EPP/ECP port (ECP + EPP mode), 5V SIMM/3.3V DIMM, and AT power supply.

Figure 1–2. Regular Mainboard Default Setting

Note: ***Make sure the system is well ventilated to prevent overheating and ensure system stability.***

2   Hardware Setup

This chapter explains how to configure the mainboard's hardware. After you install the mainboard, you can set jumpers, install memory on the mainboard, and make case connections. Refer to this chapter whenever you upgrade or reconfigure your system.
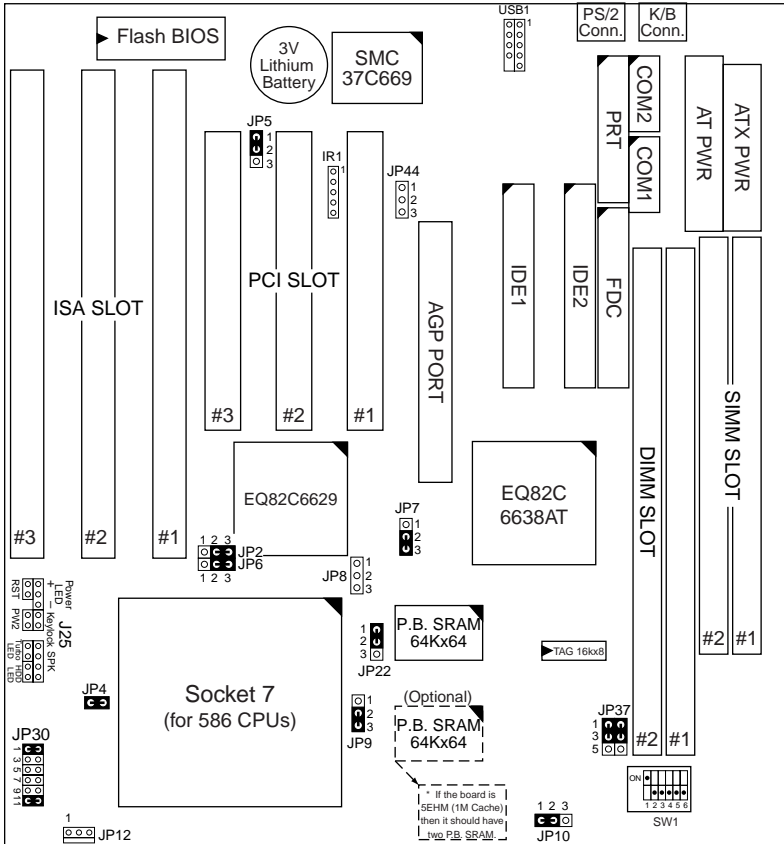
*CAUTION***: *Turn off power to the mainboard, system chassis, and*
peripheral devices before performing any work on the
mainboard or system.

Jumpers

This mainboard uses different colors of jumper caps to identify different functions of the jumpers:

Jumper Cap Color	White	Black		Blue	Red	Green	Yellow
Function	clear CMOS	CPU burst mode	Power supply selection	Smart Detect CPU voltage	DIMM voltage	CPU Voltage	Host Bus & SDRAM Frequency

JP5: CMOS Clear Jumper

Clear the CMOS memory by momentarily shorting pin 2–3; then shorting pin 1–2 to retain new settings.

CMOS Setting	JP5
Retain CMOS data (default)	1 2 3
Clear CMOS data	1 2 3

JP22: CPU Burst Mode Jumper

Due to different designs, there are two kinds of CPU burst modes: Interleave Burst and Linear Burst. Select the correct mode according to the CPU you are using.

CPU Burst Mode	JP22
Interleave (for P54C/P55C and AMD K5/K6 CPU)	1 2 3
Linear (for Cyrix 6x86/L/MX CPU)	1 2 3

When using a Cyrix series of CPUs, follow the below procedures after select the burst mode:
1. Press<Delete> key to enter the BIOS setup menu during the boot-up,
2. Select "Chipset Features Setup",
3. Set the "Linear Burst" to "Enabled",
4. Press <Esc> to go back to the main menu and choose "Save & Exit Setup" to reboot your computer.

JP4: Smart Detect CPU Voltage Auto/Manual Jumper

For P54C/P55C and Cyrix 6x86/L CPUs, this board automatically detects and adjusts the CPU voltage to the proper voltage. JP4 is reserved for a few older non-Intel CPUs which can not be detect correctly. If you run into problems while detecting the voltage of older CPUs, remove the jumper cap to correct it.

JP2, JP6: Power Supply Selection Jumpers

These two jumpers let you select either the AT or the ATX power supply. Use only one power supply at a time on this mainboard.

	JP2	JP6
AT Power Supply (default)	1 2 3	1 2 3
ATX Power Supply	1 2 3	1 2 3
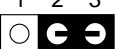
JP37: DIMM Voltage Jumper

There are two kinds of DIMM voltages in the market—3.3V and 5V—and most of SDRAM DIMMS are 3.3V. Choose the correct voltage according to the DIMM that you are using.

DIMM Voltage	JP37 Setting
3.3V (default)	1 ● ● 2 / 3 ● ● 4 / 5 ○ ○ 6
5V	1 ○ ○ 2 / 3 ● ● 4 / 5 ● ● 6

Caution: *Do not change this jumper to 5V setting unless you are sure that your DIMMs are 5V. The wrong setting may cause the system malfunction.*

JP7, JP8 : Host Bus Frequency Selection Jumper
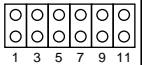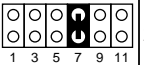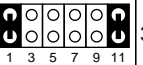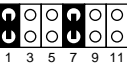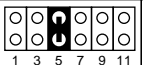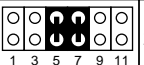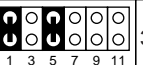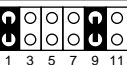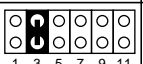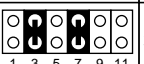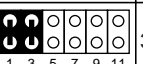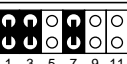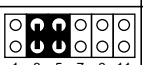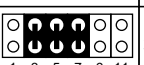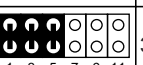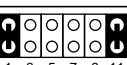
JP7	JP8	CPU Host Bus Frequency	AGP Host Bus Frequency	PCI Host Bus Frequency
1 2 3 (default)	1 2 3 (default)	66	66	33
1 2 3	1 2 3	100	66	33

JP9, JP10: SDRAM Frequency Selection Jumper

JP9	1 2 3 (defautl)	SDRAM frequency is the same as CPU frequency (60/66/75/83/100 MHz)
	1 2 3	SDRAM frequency is the same as AGP frequency (66 MHz)
JP10	1 2 3 (defautl)	SDRAM is running at CPU frequency
	1 2 3	SDRAM is running at AGP frequency

Note: 1.   The host bus frequency can not be set to 75 MHz when using a AGP card.
2.   Use 8ns SDRAM or faster (for PC100) when using a host bus frequency of 100MHz. However, this limitation does not apply to EDO modules.
3.   When the SDRAM module is slower than 8ns, JP9 and JP10 must be set to AGP frequency.

JP30: Voltage Jumper Settings

2.0V	2.4V	2.8V	3.2V	
2.1V	2.5V	2.9V	3.3V	
2.2V	2.6V	3.0V	3.4V	
2.3V	2.7V	3.1V	3.5V	

CPU Type Configuration

SW1 and JP30 are the only switchs/jumpers that you need to set for your CPU on this mainboard. Make sure that you know the type of CPU that you are installing and refer to the proper settings which are listed below. If you have a higher frequency CPU then the one listed below, see the "Quick Installation Guide" for more SW1 information.

SW1: **Frequency Setting**. Some newer CPUs may not be included in this section, please refer to the Appendix for more information.

JP30: **Voltage Setting.** There are two kinds of CPU voltages currently on the market—Single and Dual. The CPUs which fall under the single voltage category are: P54C, AMD-K5, and Cyrix 6x86. The CPUs which fall under the dual voltage category are: P55C, AMD-K6, and Cyrix 6x86L/MX. This board is designed to detect the CPU voltage automatically for P54C and P55C CPUs due to the Smart Detect CPU Voltage function, and therefore, there is no need to move any jumpers to set the voltage for P54C/P55C CPUs.
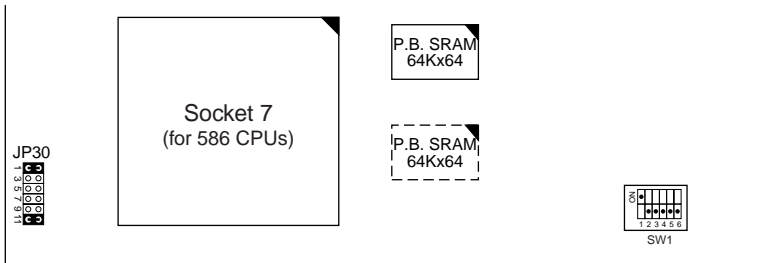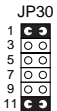
Figure 2–1. Location of JP30 and SW1

P54C/P55C Series CPUs Settings
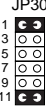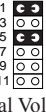
CPU	Frequency Setting (SW1)	Voltage Setting (JP30)	JP7	JP8	JP9	JP10
P54C–90MHz	External : 60MHz Ratio : 1.5x	JP30 Single Voltage 3.52V (default)	2-3	open (default)	2-3	1-2
P54C–100MHz	External : 66MHz Ratio : 1.5x					

P54C/P55C Series CPUs Settings (Continued)

CPU	Frequency Setting (SW1)	Voltage Setting (JP30)	JP7	JP8	JP9	JP10
P54C–120MHz	External : 60MHz Ratio : 2.0x					
P54C–133MHz (default)	External : 66MHz Ratio : 2.0x	JP30 Single Voltage 3.52V (default)				
P54C–150MHz	External : 60MHz Ratio : 2.5x					
P54C–166MHz	External : 66MHz Ratio : 2.5x		2-3	open (default)	2-3	1-2
P54C–180MHz	External : 60MHz Ratio : 3.0x					
P54C–200MHz	External : 66MHz Ratio : 3.0x					
P55C–166MHz (MMX)	External : 66MHz Ratio : 2.5x	JP30 DualVoltage 2.8V (default)				
P55C–180MHz (MMX)	External : 60MHz Ratio : 3.0x		2-3	open (default)	2-3	1-2
P55C–200MHz (MMX)	External : 66MHz Ratio : 3.0x					
P55C–233MHz (MMX)	External : 66MHz Ratio : 3.5x					

Note: 1. *The voltage setting for 3.52V and 2.8V are the same due to the Smart Detect CPU Voltage function.*

2. *When using SDRAM on Intel CPUs, you have to use either 8ns or 10ns SDRAMs.*

AMD K5/K6 Series CPUs Setting
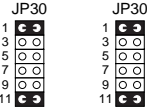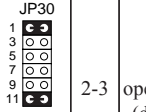
CPU	Frequency Setting (SW1)	Voltage Setting (JP30)	JP7	JP8	JP9	JP10
AMD K5–PR90	External : 60MHz Ratio : 1.5x					
AMD K5–PR100	External : 66MHz Ratio : 1.5x	JP30 Single Voltage 3.52V (default)	2-3	open	2-3 (default)	1-2
AMD K5–PR120	External : 60MHz Ratio : 1.5x					
AMD K5–PR133	External : 66MHz Ratio : 2.0x					
AMD K5–PR166	External : 66MHz Ratio : 2.5x					
AMD K6–PR166	External : 66MHz Ratio : 2.5x	JP30 Dual Voltage 2.9V	2-3	open	2-3 (default)	1-2
AMD K6–PR180	External : 60MHz Ratio : 3.0x					
AMD K6–PR200	External : 66MHz Ratio : 3.0x					
AMD K6–PR233	External : 66MHz Ratio : 3.5x	JP30 Dual Voltage 3.2V				
AMD K6–3D*	External : 100MHz Ratio : 2.5x	JP30 Dual Voltage 2.2V	1-2	2-3	2-3 or 1-2	1-2 or 2-3

*: You need to use 8ns or faster SDRAMs and set JP9/JP10 to 2-3/1-2 when using K6-3D CPU.

Note: 1. When using SDRAM on all AMD CPUs, you need to use 8ns or 10ns SDRAMs except K6-3D.

2. The voltage of AMD may vary from market to market. Please ask your CPU provider for detail.

Cyrix 6x86/L/MX Series CPUs Setting

CPU	Frequency Setting (SW1)	Voltage Setting (JP30)		JP7	JP8	JP9	JP10
Cyrix 6x86/6x86L –PR150	External : 60MHz Ratio : 2.0x	JP30 — Single Voltage 3.52V (default)	JP30 — Dual Voltage 2.8V (default)	2-3	open (default)	2-3	1-2
Cyrix 6x86/6x86L –PR166	External : 66MHz Ratio : 2.0x						
Cyrix 6x86/6x86L –PR200	External : 75MHz Ratio : 2.0x						
Cyrix 6x86MX –PR166	External : 60MHz Ratio : 2.5x	JP30 — Dual Voltage 2.9V		2-3	open (default)	2-3	1-2
Cyrix 6x86MX –PR200	External : 66MHz Ratio : 2.5x						
Cyrix 6x86MX –PR200	External : 75MHz Ratio : 2.0x						
Cyrix 6x86MX –PR233	External : 75MHz Ratio : 2.5x						
Cyrix 6x86MX –PR233	External : 66MHz Ratio : 3.0x						
Cyrix 6x86MX –PR266	External : 83MHz Ratio : 2.5x			1-2	2-3	2-3	1-2

Note: 1. There are two kinds of Cyrix MX–PR200/PR233 CPUs as you could see on the above list. Make sure the type of your CPU first from your CPU provider and then set the SW1 and JP30.

2. The voltage setting for 3.52V and 2.8V are the same due to the Smart Detect CPU Voltage technology.

3. The host bus frequency can not be set to 75 MHz when using a AGP card.

4. When using SDRAM on Cyrix CPUs, you need to use 8ns or 10ns SDRAMs.

Memory Configuration

The mainboard supports two strips of **72-pin 5V FPM/EDO DRAM (SIMM) from 4 to 32MB and two strips of 168-pin 3.3V/5V Unbuffered DIMM modules from 8 to 128MB.** The mainboard requires SIMM modules of at least 70ns access time.

You can install memory in any combination without having to rely on a memory configuration table. memory configuration is thus "**Table-Free**" in any memory bank. You must install two SIMM modules to complete a bank.

Memory Configuration Table

		DIMM Bank	
	SIMM Bank	DIMM 1	DIMM 2
RAM Type	FPM/EDO	FPM/EDO/ SDRAM	FPM/EDO/ SDRAM
Single RAM Module Size (MB)	4/8/16/32	8/16/32/64/128	8/16/32/64/128

Note: Do not install FPM or EDO SIMM/DIMM when you already installed SDRAM type of DIMM.

Cache Configuration

The mainboard has a write-back caching scheme with built-in 512KB or 1MB Level 2 Pipelined Burst cache onboard to improve the system performance.

Cache Size and RAM Locations

Cache Size	Cache RAM	TAG RAM	Cacheable Range
512KB	64k x 64 U2	16K x 8 U3	64MB (1 dirty bit) 128MB (0 dirty bit)
1MB	64k x 64 U2, U4	16K x 8 U3	128MB (1 dirty bit) 256MB (0 dirty bit)

Multi I/O Port Addresses

Default settings for multi-I/O port addresses are shown in the table below.

Port	I/O Address	IRQ	Status
LPT1*	378H	7	ECP + EPP
COM1	3F8H	4	
COM2	2F8H	3	

* If default I/O port addresses conflict with other I/O cards (e.g. sound cards or I/O cards), you must adjust one of the I/O addresses to avoid address conflict. (You can adjust these I/O addresses from the BIOS.)

Note: *Some sound cards have a default IRQ setting for IRQ7, which may conflict with printing functions. If this occurs do not use sound card functions at the same time you print.*

Connectors

Attach the mainboard to case devices via connectors on the mainboard. Refer to Figure 1-1 for connector locations and connector pin positions.

J25 – Front Panel Connectors

This set of connectors includes: Keylock/Power LED connector, Speaker connector, Reset Connector, PW2, and Turbo/HDD LED Connector. The features of each of these connectors are well explained below.
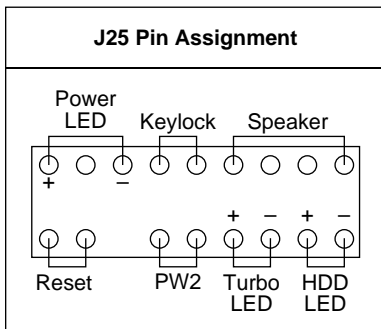
HD LED – IDE Device LED Connector
Attach a 2-pin IDE drive LED cable to this connector. The LED lights when an IDE device is active.

KB_LOCK – Keylock & Power LED Connector
It is a 5-pin connector for a lock that may be installed on the system case for enabling or disabling the keyboard. It also attaches to the case's Power LED. Pin 1, 3 are for power LED and pin 4, 5 are for keylock.

RESET – Hardware Reset Switch Connector
Attach 2-pin hardware reset switch to it. Closing the reset switch restarts the system.

SPEAK – PC Speaker Connector
Attach a 4-pin PC speaker cable from the case to this connector.

TB LED – Turbo LED Connector
Attach a 2-pin turbo LED cable to it. The LED lights when the system is in turbo mode. Manufacture default has set the board in turbo mode due to most of hardware and software are compliance to turbo mode.

PW2 — ATX Power Supply On/Off Switch Connector (Momentary Type)
Attach a two-pin switch to this connector for turning the ATX power supply on/off.

COM1/COM2 – COM1/COM2 Serial Port Connectors
Attach COM1/COM2 device cables to these connectors.

PRT – Parallel Port Connector
A 26-pin female connector is located at the rear of the board. Plug the parallel port device cable into this connector.

JP44 – Wake-On-LAN (WOL) Header

Attach a 3-pin connector from the LAN card which supports the Wake-On-LAN (WOL) function. This function lets users wake up the connected computer through the LAN card. (The cable should be included with the LAN card.)

JP44 Pin Assignment
1 ⊖ 5V
2 ⊖ GND
3 ⊖ SENSOR

PS1 – PS/2 Mouse Connector

Attach 6-pin male PS/2 mouse cable to this connector to enable PS/2 mouse function.

PS/2 Mouse Connector Pin Assignment			
GND	DATA	N/A	Vcc
Clcok			N/A

USB1 – USB Ports Connectors

Attach 9-pin USB cable to this connector for normal USB devices.

AT PWR (CN1)– AT Power Supply Connectors

The mainboard requires a power supply with at least 200 watts and a "power good" signal. AT PW has two 6-pin male header connectors. Plug the dual connectors from the power directly onto the board connector while making sure the black leads are in the center.
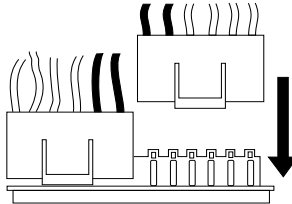
IDE1/IDE2 – Primary/Secondary IDE Device Connectors

Attach the IDE device cables to these connectors.

ATX PWR (P1)– ATX Power Supply Connector

The motherboard provides an ATX power supply connector. It is a twenty-pin male header connector. Plug the connector from the power directly onto the board connector while making sure the pin1 is in its position.
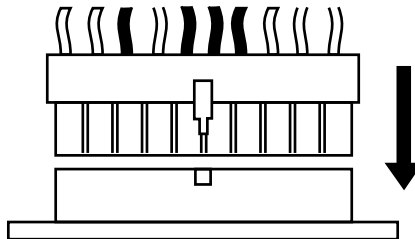
JP12 – CPU Cooling Fan Connector

Attach a 3-pin CPU cooling fan cable to this connector. Make sure the pin assignment of the fan matches this connector or you may damage the system. This fan will stop when the system is into the suspend mode, if you enable the Suspend Mode in the BIOS setup.

```
CPU Cooling Fan
Pin Assignment

  1   2   3

GND 12V NC
```
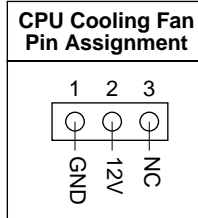
IR – Infrared Device Connector

Attach a 5-pin infrared device cable to this connector for enabling the infrared transfer function. This mainboard meets the specification of ASKIR and HPSIR.

```
IR Connector
Pin Assignment

1   VCC
2   Empty
3   IRRX
4   GND
5   IRTX
```
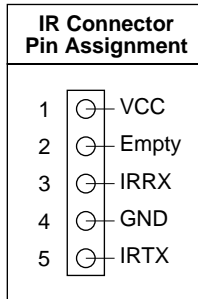
3   BIOS Setup

The mainboard's BIOS setup program is the ROM PCI/ISA BIOS from Award Software Inc. Enter the Award BIOS program's Main Menu as follows:

1. Turn on or reboot the system. After a series of diagnostic checks, you are asked to press DEL to enter Setup.
2. Press the <DEL> key to enter the Award BIOS program and the main screen appears:

```
                        ROM PCI/ISA BIOS
                       CMOS SETUP UTILITY
                     AWARD SOFTWARE, INC.
 ┌─────────────────────────────────────────────────────────────┐
 │                                                               │
 │    STANDARD CMOS SETUP          INTEGRATED PERIPHERALS        │
 │                                                               │
 │    BIOS FEATURES SETUP          SUPERVISOR PASSWORD           │
 │                                                               │
 │    CHIPSET FEATURES SETUP       USER PASSWORD                 │
 │                                                               │
 │    POWER MANAGEMENT SETUP       IDE HDD AUTO DETECTION        │
 │                                                               │
 │    PNP/PCI CONFIGURATION        SAVE & EXIT SETUP             │
 │                                                               │
 │    LOAD SETUP DEFAULTS          EXIT WITHOUT SAVING           │
 │                                                               │
 │    LOAD BIOS DEFAULTS                                         │
 ├─────────────────────────────────────────────────────────────┤
 │ Esc : Quit                    ↑ ↓ → ←  : Select Item         │
 │ F10 : Save & Exit Setup       (Shift) F2 : Change Color      │
 ├─────────────────────────────────────────────────────────────┤
 │                Time, Date, Hard Disk Type...                  │
 └─────────────────────────────────────────────────────────────┘
```

3. Choose an option and press <Enter>. Modify the system parameters to reflect the options installed in the system. (See the following sections.)
4. Press <ESC> at anytime to return to the Main Menu.
5. In the Main Menu, choose "SAVE AND EXIT SETUP" to save your changes and reboot the system. Choosing "EXIT WITHOUT SAVING" ignores your changes and exits the program.

The Main Menu options of the Award BIOS are described in the sections that follow.

Standard CMOS Setup

Run the Standard CMOS Setup as follows.

1. Choose "STANDARD CMOS SETUP" from the Main Menu. A screen appears.

```
                    ROM PCI/ISA BIOS
                   STANDARD CMOS SETUP
                  AWARD SOFTWARE, INC.
┌─────────────────────────────────────────────────────────────────────┐
│                                                                       │
│  Date (mm:dd:yy) : Sat, Jan 10 1998                                   │
│  Time (hh:mm:ss) :  7 : 30 : 33                                       │
│                                                                       │
│  HARD DISKS        TYPE   SIZE    CYLS HEAD   PRECOMP   LANDZ  SECTOR  MODE │
│                                                                       │
│  Primary Master   : AUTO    0       0    0         0       0       0  AUTO │
│  Primary Slave    : AUTO    0       0    0         0       0       0  AUTO │
│  Secondary Master : AUTO    0       0    0         0       0       0  AUTO │
│  Secondary Slave  : AUTO    0       0    0         0       0       0  AUTO │
│                                                                       │
│  Drive A : 1.44M, 3.5 in.                                             │
│  Drive B : None                      Base Memory:     640K            │
│  Floppy 3 Mode Support : Disabled   Extended Memory:  31744K          │
│                                       Other Memory:    384K           │
│  Video  : EGA/VGA                                                     │
│  Halt On : All Errors                Total Memory:   32768K           │
│                                                                       │
│  Esc : Quit         ↑↓ → ←    : Select Item    PU/PD/+/− : Modify     │
│  F11 : Help        (Shift) F2 : Change Color    F3 : Toggle Calendar  │
└─────────────────────────────────────────────────────────────────────┘
```

2. Use arrow keys to move between items and select values. Modify selected fields using PgUp/PgDn/+/− keys. Some fields let you enter values directly.

Date (mm/dd/yy)   Type the current date.

Time (hh:mm:ss)   Type the current time.

Primary   First, choose the type of hard disk that you
(Secondary)   already installed:
Master & Slave
                Auto –   BIOS detects hard disk type automatically (default)

                $1 \sim 45$ –   Selects standard hard disk type

                User –   User defines the type of hard disk. Choose "None" when there is no hard disk installed.

                Next, choose hard disk mode:

                Auto –   BIOS detects hard disk mode automatically (default)

                Normal –   Normal IDE hard disk (smaller than 528MB)

                LBA –   Enhanced–IDE hard disk (larger than 528MB)

Primary (Secondary) Master & Slave (Continued)	Large – Large IDE hard disk (for certain hard disk)
	Note: *If you have any questions on your hard disk type or mode, ask your hard disk provider or previous user for details.*
Drive A & B	Choose 360KB , 5 1/4 **in**., 1.2MB , 5 1/4 **in**., 720KB , 3 1/2 **in**., 1.44M , 3 1/2 **in**.(default), 2.88 MB, 3 1/2 **in**. or None
Floppy 3 Mode Support	Choose Disabled (default) or Enabled. When enables this function, the system will support 720KB/1.25MB/1.44MB 3 different mode floppy diskette.
	Note: *This function is for a special disk drive which happens to be popular in Japan.*
Video	Choose MONO, EGA/VGA (default), CGA40, or CGA80.
Halt On	Choose halt mode when BIOS detects system errors:

All Errors (default)	All, But Diskette
No Errors	All, But Keyboard
	All, But Disk/Key

3. When you finish, press the <ESC> key to return to the Main Menu.

BIOS Features Setup

Run the BIOS Features Setup as follows.

1. Choose "BIOS FEATURES SETUP" from the Main Menu and a screen with a list of items appears. (**The screen below shows the BIOS default settings.**)

```
                    ROM PCI/ISA BIOS
                   BIOS FEATURES SETUP
                   AWARD SOFTWARE, INC.

┌─────────────────────────────────┬────────────────────────────────────┐
│Virus Warning            : Disabled│Video  BIOS Shadow  : Enabled       │
│CPU Internal Cache       : Enabled │C8000-CBFFF Shadow  : Disabled      │
│External Cache           : Enabled │CC000-CFFFF Shadow  : Disabled      │
│Quick Power on Self Test : Enabled │D0000-D3FFF Shadow  : Disabled      │
│Boot Sequence            : A,C,SCSI│D4000-D7FFF Shadow  : Disabled      │
│Swap Floppy Drive        : Disabled│D8000-DBFFF Shadow  : Disabled      │
│Boot Up NumLock Status   : On      │DC000-DFFFF Shadow  : Disabled      │
│Gate A20 Option          : Fast    │                                    │
│Memory parity/ECC Check  : Disabled│                                    │
│Typematic Rate Setting   : Disabled│                                    │
│Typematic Rate (Chars/Sec) : 6     │                                    │
│Typematic Delay (Msec)   : 250     │ESC : Quit         ↑↓→←: Select Item│
│Security Option          : Setup   │F1  : Help      PU/PD/+/- : Modify  │
│IDE Second Channel Control : Enabled│F5  : Old Values (Shift)F2 : Color │
│PCI/VGA Palette Snoop    : Disabled│F6  : Load BIOS Defaults            │
│OS Select for DRAM >64MB : Non-OS2 │F7  : Load Setup Defaults           │
└─────────────────────────────────┴────────────────────────────────────┘
```

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/– keys. <F> keys are explained below:

    <F1>:   "Help" gives options available for each item.

    Shift <F2>:   Change color.

    <F5>:   Get the old values. These values are the values with which the user started the current session.

    <F6>:   Load all options with the BIOS Setup default values.

    <F7>:   Load all options with the Power-On default values.

A short description of screen items follows:

Virus Warning   Enable this option will allow BIOS to protect the boot sectors and partition tables of your hard disk. Any attempt to write to them will cause the system to halt and display a warning message.

CPU Internal Cache   This option enables/disables the CPU's internal cache. (The Default setting is Enabled.)

External Cache   This option enables/disables the external cache memory. (The Default setting is Enabled.)

Quick Power On Self Test	Enabled provides a fast POST at boot-up .
Boot Sequence	Choose the boot device sequence as your need. For example, "A, C, SCSI" means BIOS will look for an operating system first from drive A, drive C, then SCSI device. Options of this function are: A, C, SCSI C, A, SCSI C, CDROM, A CDROM, C, A D, A, SCSI E, A, SCSI F, A, SCSI SCSI, A, C SCSI, C, A C only LS/ZIP, C.
Swap Floppy Drive	Enabled changes the sequence of the drive A and drive B to drive B and drive A. (The Default setting is Disabled.)
Boot Up Num Lock Status	Choose **On** (default) or **Off**. On puts numeric keypad in Num Lock mode at boot-up. Off puts this keypad in arrow key mode at boot-up.
Gate A20 Option	Choose **Fast** (default) or **Normal**.
Memory Parity/ECC Check	Choose Enabled or Disabled (default). Set this option to Enabled when using ECC or Parity check memory.
Typematic Rate Setting	Enable this option to adjust the keystroke repeat rate. Default is Disabled.
Typematic Rate (Chars/Sec)	Choose the rate a character keeps repeating.
Typematic Delay (Msec)	Choose how long after you press a key that a character begins repeating.

Security Option Choose **Setup** or **System**. Use this feature to prevent unauthorized system boot-up or use of BIOS Setup.

"System" – Each time the system is booted the password prompt appears.

"Setup"– If a password is set, the password prompt only appears if you attempt to enter the Setup program.

IDE Second Channel Control Choose Enabled (default) or Disabled. Set to Disabled when you need to turn off the IDE Second channel.

PCI/VGA Palette Snoop Enabled: The color of the monitor may be incorrect if uses with MPEG card. Enable this option to make the monitor normal.

Disabled: Disable Snoop function (default).

OS Select for DRAM >64MB OS2 – Choosing this when you are using OS/2 operation system.

Non-OS/2 – Choosing this when you are using no-OS/2 operation system.

Video Adapter BIOS Shadow BIOS shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM. These 16K segments can be shadowed from ROM to RAM. BIOS is shadowed in a 16K segment if it is enabled and it has BIOS present.

3. After you have finished with the BIOS Features Setup program, press the <ESC> key and follow the screen instructions to save or disregard your settings.

Chipset Features Setup

The Chipset Features Setup option changes the values of the chipset registers. These registers control system options in the computer.

Note: Change these settings only if you are familiar with the Chipset.

Run the Chipset Features Setup as follows.

1. Choose "CHIPSET FEATURES SETUP" from the Main Menu and the following screen appears. (The screen below shows default settings.)

```
                        ROM PCI/ISA BIOS
                     CHIPSET FEATURES SETUP
                      AWARD SOFTWARE, INC.

 Bank 0/1 DRAM Timing     : 60ns
 Bank 2/3 DRAM Timing     : 60ns
 Bank 4/5 DRAM Timing     : 60ns
 DRAM Read Pipeline       : Enabled
 Tag Config (dirty bit)   : 1
 Cache Rd+CPU Wt Pipeline : Enabled
 Linear Burst             : Disabled

 Video BIOS Cacheable     : Enabled
 System BIOS Cacheable    : Enabled
 Memory Hole At 15M-16M   : Disabled     ESC : Quit         ↑↓→←: Select Item
                                         F1  : Help         PU/PD/+/- : Modify
 AGP Aperture Size        : 64M          F5  : Old Values (Shift)F2 : Color
 OnChip USB               : Disabled     F6  : Load BIOS Defaults
                                         F7  : Load Setup Defaults
 Spread Spectrum          : Disabled
```

2. Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/+/– keys.

A short description of screen items follows:

Bank 0/1 DRAM Timing	Choose DRAM Timing 60ns (default),
Bank 2/3 DRAM Timing	70ns, Normal, Mdeium, Fast, or Turbo.
Bank 4/5 DRAM Timing	
DRAM Read Pipeline	Use the default setting.
Tag Config (dirty bit)	Choose 1 (default): Write-back cache or 0: Write-through cache
Cache Rd+CPU Wt Pipeline	Use the default setting.

Linear Burst	Choose Enabled or Disabled (default). Set this option to Enabled when using Cyrix processor.
Video BIOS Cacheable	Disabled – The video BIOS C0000H-C7FFFH is not cached. Enabled – The video BIOS C0000H-C7FFFH is cacheable if cache controller is enabled.
System BIOS Cacheable	Disabled – The ROM area F0000H-FFFFFH is not cached. Enabled – The ROM area F0000H-FFFFFH is cacheable if cache controller is enabled.
Memory Hole At 15M-16M	Choose Enabled or Disabled (default). Some interface cards will map their ROM address to this area. If this occurs, you should select Enabled, otherwise use Disabled.
AGP Aperture Size	AGP could use the DRAM as its video RAM. Choose the DRAM size that you want it to be used as video RAM. The range is from 4MB to 256MB.
OnChip USB	Choose Enabled or Disabled (default). Set to Enabled when using the USB device.
Spread Spectrum	Enabled it when you want to run the FCC or DOC testing.

3. After you have finished with the Chipset Features Setup, press the <ESC> key and follow the screen instructions to save or disregard your settings.

Power Management Setup

The Power Management Setup option sets the system's power saving functions.

Run the Power Management Setup as follows.

1. Choose "POWER MANAGEMENT SETUP" from the Main Menu and a screen with a list of items appears.

```
                          ROM PCI/ISA BIOS
                         CMOS SETUP UTILITY
                        POWER MANAGEMENT SETUP

Power Management    : User Define   Primary INTR          : ON
PM Control by APM   : Yes           IRQ3 (COM 2)          : Primary
Video Off Method    : Suspend -> Off IRQ4 (COM 1)         : Primary
Video Off After     : DPMS Support  IRQ5 (LPT 2)          : Primary
Modem Use IRQ       : 3             IRQ6 (Floppy Disk)    : Primary
Sof-Off by PWR-BTTN : Instant-Off   IRQ7 (LPT 1)          : Primary
                                    IRQ8 (RTC Alarm)      : Disabled
     ** PM Timers **                IRQ9 (IRQ2 Redir)     : Secondary
HDD Power Down      : Disabled      IRQ10 (Reserved)      : Secondary
Doze Mode           : Disabled      IRQ11 (Reserved)      : Secondary
Suspend Mode        : Disabled      IRQ12 (PS/2 Mouse)    : Primary
                                    IRQ13 (Coprocessor)   : Primary
     ** PM Events **                IRQ14 (Hard Disk)     : Primary
VGA                 : OFF           IRQ15 (Reserved)      : Disabled
LPT & COM           : LPT/COM
HDD & FDD           : ON
DMA/Master          : OFF           ESC : Quit      ↑↓→←: Select Item
Modem Ring Resume   : Disabled      F1  : Help      PU/PD/+/- : Modify
RTC Alarm Resume    : Disabled      F5  : Old Values (Shift)F2 : Color
                                    F6  : Load BIOS Defaults
                                    F7  : Load Setup Defaults
```

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/- keys.

A short description of selected screen items follows:

Power Management   Options are as follows:

User Define –	Let's you define the HDD and system power down times (default).
Disable –	Disables the Green PC Features.
Min Saving –	Doze timer = 1 Hour Standby timer = 1 Hour Suspend timer = 1 Hour HDD Power Down = 15 Min
Max Saving –	Doze timer = 1 Min Standby timer = 1 Min Suspend timer = 1 Min HDD Power Down = 1 Min

PM Control by APM	Choose **Yes** (default) or **No**. APM stands for Advanced Power Management. To use APM, you must run "power.exe" under DOS v6.0 or later version.
Video Off Option	Susp, Stby→off: Video off when the system runs into Suspend or Standby mode.
	All Modes→off: Video off in all modes.
	Always On: Video never off.
	Suspend→off: Video off when system runs into the suspend mode.
Video Off Method	Choose **DPMS Support (default), Blank screen, or V/H Sync+Blank** for the selected PM mode.
Modem Use IRQ	Choose Modem IRQ Setting. Default setting is set on IRQ3.
Soft-Off by PWR-BTTN	Choose **Instant-off** (default) or **Delay 4 Sec**. **Delay 4 Sec** turns off the system power 4 seconds after pushing the power button
HDD Power Down	When the set time has elapsed, the BIOS sends a command to the HDD to power down, which turns off the motor. Time is adjustable from 1 to 15 minutes. The default setting is Disabled. Some older model HDDs may not support this advanced function.
Doze Mode	When the set time has elapsed, the BIOS sends a command to the system to enter doze mode (system clock drops to 33MHz). Time is adjustable from 1 Min to 1 Hour.
Standby Mode	The default is Disabled. Time is adjustable from 1 Min to 1 Hour.

Suspend Mode	The default is Disabled. Only an SL-Enhanced (or SMI) CPU can enter this mode. Time is adjustable from 1 Min to 1 Hour. Under Suspend mode, the CPU stops completely (no instructions are executed.)
VGA	Choose **Off** (default) or **On** to disable or enable the power management.
LPT & COM	Choose LPT/COM (default) or LPT (COM) to enable the power management timer. Choose NONE to disable the power management timer.
HDD &FDD	Choose **On** (default) to enable the power management timer, or **Off** to disable the power management timer.
DMA/master	Choose **Off** (default) or **On**. If you choose the system "Off", will not monitor the signal of DMA/master; and when you choose "On", the system will not have SMI signal until the master is finished while the master is working.
Modem Ring Resume	Choose **Enabled** or **Disabled** (default). This function only works when the computer is powered on. Enabled – The system will resume active when modem is ringing. Disabled – The system will not resume when modem is ringing.
RTC Alarm Resume	Choose **Enabled** or **Disabled** (default). Enabled – Set alarm to wake up the system either by the date (1-31) or time (hh:mm:ss), and if the date is set to 0, it means that the system will wake up by the alarm everyday. Disabled – The system ignores the alarm.
Primary INTR	When **On** (default) is chosen, you can choose any IRQ #.

IRQ#   When set at "Primary" the processor will power down only after the BIOS detects a "no IRQ activity" during the time specified by the Suspend time. If set at "Secondary event" the system will distinguish whether an interrupt accesses and I/O address or not. If it does, the system enters the standby mode. If not, the system enters the dreaming mode; that is the system goes back full-on status but leaves the monitor blank. For instance, if the system connects to a LAN and receives an interrupt from its file server, the system will enter the dreaming mode to execute the corresponding calling routine.

3.   After you have finished with the Power Management Setup, press the <ESC> key to return to the Main Menu.

PNP/PCI Configuration Setup

This option sets the mainboard's PCI Slots. Run this option as follows:

1.   Choose "PNP/PCI CONFIGURATION SETUP" from the Main Menu and the following screen appears. (The screen below shows default settings.)

```
                      ROM PCI/ISA BIOS
                     PNP/PCI CONFIGURATION
                     AWARD SOFTWARE, INC.

 Resources Controlled By : Manual      CPU to PCI Write Buffer  : Enabled
 Reset Configuration Data : Disabled   PCI Master Broken Timer  : Disabled
 ACPI I/O Device Node    : Enabled     PCI IRQ Actived By       : Level
 IRQ-3  assigned to : Legacy ISA*      Assign IRQ for USB       : Enabled
 IRQ-4  assigned to : Legacy ISA*      Assign IRQ for VGA       : Enabled
 IRQ-5  assigned to : PCI/ISA PnP*
 IRQ-7  assigned to : PCI/ISA PnP*
 IRQ-9  assigned to : PCI/ISA PnP*
 IRQ-10 assigned to : PCI/ISA PnP*
 IRQ-11 assigned to : PCI/ISA PnP*
 IRQ-12 assigned to : PCI/ISA PnP*
 IRQ-14 assigned to : PCI/ISA PnP*
 IRQ-15 assigned to : PCI/ISA PnP*

 DMA-0  assigned to : PCI/ISA PnP*
 DMA-1  assigned to : PCI/ISA PnP*     ESC : Quit       ↑↓→←: Select Item
 DMA-3  assigned to : PCI/ISA PnP*     F1  : Help       PU/PD/+/- : Modify
 DMA-5  assigned to : PCI/ISA PnP*     F5  : Old Values (Shift)F2 : Color
 DMA-6  assigned to : PCI/ISA PnP*     F6  : Load BIOS Defaults
 DMA-7  assigned to : PCI/ISA PnP*     F7  : Load Setup Defaults
```

*: *These items will disappear when Resource Controlled. is Auto.*

2.   Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/+/– keys.

A short description of screen items follows:

Resources Controlled By	Manual –	BIOS doesn't manage PCI/ISA PnP card (i.e., IRQ) automatically.
	Auto –	BIOS auto manage PCI and ISA PnP card (recommended).
Reset Configuration Data	Disabled –	Retain PnP configuration data in BIOS.
	Enabled –	Reset PnP configuration data in BIOS.
ACPI I/O Device Node	Use the default setting.	
IRQX and DMAX assigned to	Choose **PCI/ISA PnP** or **Legacy ISA**. If the first item is set to **Manual**, you could choose IRQX and DMAX assigned to PCI/ISA PnP card or ISA card.	
CPU to PCI Write Buffer	Choose Enabled (default) or Disabled.	
PCI Master Broken Timer	Choose Enabled or Disabled (default).	
PCI IRQ Activated By	Choose **Edge** or **Level**. Most PCI trigger signals are Level. This setting must match the PCI card.	
Assign IRQ for USB	Choose Enabled (default) or Disabled to enable or disable USB IRQ.	
Assign IRQ for VGA	Chooe Enabled (default) or Disabled to enable or disable VGA IRQ.	

3.   After you have finished with the PCI Slot Configuration, press the <ESC> key and follow the screen instructions to save or disregard your settings.

Load Setup Defaults

This item loads the system values you have previously saved. Choose this item and the following message appears:

"Load SETUP Defaults (Y/N)? N"

To use the SETUP defaults, change the prompt to "Y" and press <Enter>. This item is recommended if you need to reset the system setup.

Note: The SETUP Defaults are optimized for the most stabilized performance.

Load BIOS Defaults

Choose this item and the following message appears:

"Load BIOS Defaults (Y/N)?N"

To use the BIOS defaults, change the prompt to "Y" and press <Enter>.

Note: BIOS DEFAULTS values are adjusted for high performance. If you run into any problems after loading BIOS DEFAULTS, please load the SETUP DEFAULTS for the stable performance.

Integrated Peripherals

The Integrated Peripherals option changes the values of the chipset registers. These registers control system options in the computer.

Note: Change these settings only if you are familiar with the Chipset.

Run the Integrated Peripherals as follows.

1. Choose "Integrated Peripherals" from the Main Menu and the following screen appears. (The screen below shows default settings:)

```
                    ROM PCI/ISA BIOS
                  INTEGRATED PERIPHERALS
                   AWARD SOFTWARE, INC.

OnChip IDE First Channel   : Enabled   Onboard Parallel Port   : 378/IRQ7
OnChip IDE Second Channel  : Enabled   Parallel Port Mode      : ECP+EPP
IDE Prefetch Mode          : Enabled   ECP Mode Use DMA        : 3
IDE HDD Block Mode         : Enabled   Parallel Port EPP Type  : EPP1.9
IDE Primary Master PIO     : Auto
IDE Primary Slave PIO      : Auto
IDE Secondary Master PIO   : Auto
IDE Secondary Slave PIO    : Auto
IDE Primary Master UDMA    : Auto
IDE Primary Slave UDMA     : Auto
IDE Secondary Master UDMA  : Auto
IDE Secondary Slave UDMA   : Auto

Onboard FDC Controller     : Enabled   ESC : Quit        ↑↓→←: Select Item
Onboard UART 1             : 3F8/IRQ4  F1  : Help      PU/PD/+/- : Modify
Onboard UART 2             : 2F8/IRQ3  F5  : Old Values (Shift)F2 : Color
Onboard UART 2 Mode        : Standard  F6  : Load BIOS Defaults
                                       F7  : Load Setup Defaults
```

2. Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/+/– keys.

A short description of screen items follows:

On-chip Primary PCI IDE/	Enabled – Use the on-board IDE (default)
On-chip Secondary PCI IDE	Disabled – Turn off the on-board IDE
IDE Prefetch Mode	Use the default setting.
IDE HDD Block Mode	Choose **Enabled** (default) or **Disabled**. Enabled invokes multi-sector transfer instead of one sector per transfer. Not all HDDs support this function.

IDE Primary Master PIO/ **IDE Primary Slave PIO/** **IDE Secondary Master PIO/** **IDE Secondary Slave PIO**	Choose **Auto** (default) or **mode 0~4**. Mode 0 is the slowest speed, and HDD mode 4 is the fastest speed. For better performance and stability, we suggest you use the Auto setting to set the HDD control timing.
IDE Primary Master UDMA/ **IDE Primary Slave UDMA/** **IDE Secondary Master UDMA/** **IDE Secondary Slave UDMA**	Choose **Auto** (default) or **Disabled**. Auto – Supports Ultra DMA mode.
Onboard FDC Controller	Enabled – Use the on-board floppy controller (default). Disabled – Turn off the on-board floppy controller.
Onboard UART 1 **Onboard UART 2**	Choose UART 1 & 2's I/O address. Do no set port 1 & 2 to the same value except for Disabled. Choose Auto for automatic setting for the I/O address and IRQ. COM1/3F8H COM3/3E8H COM2/2F8H COM4/2E8H (default)
Onboard UART 2 Mode	Choose Standard (default), HPSIR, or ASKIR to meet the specification of your Infra Red device.
IR Duplex Mode	Use the default setting (Half). This function shows up only when either HPSIR or ASKIR is chosen in the previous function (Onboard UART 2 Mode).

Onboard Parallel Port	Choose the parallel port I/O address: 378H/IRQ7 (default), 3BCH/IRQ7, 278H/IRQ5, or Disabled to disable this port.
Parallel Port Mode	Choose **ECP+EPP** (default)**, SPP**, **EPP**, or **ECP.** The mode depends on your external device that connects to this port.
ECP Mode Use DMA	Choose **DMA3** (default) or **DMA1**. This setting only works when the Onboard Printer Mode is set at the ECP mode.
Parallel Port EPP Type	Choose EPP 1.9 (default) or EPP 1.7.

3. After you have finished with the Integrated Peripherals, press the <ESC> key and follow the screen instructions to save or disregard your settings.

Supervisor Password

Based on the setting you made in the "Security Option" of the "BIOS FEATURES SETUP", this Main Menu item lets you configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program. Change the password as follows:

1. Choose "SUPERVISOR PASSWORD" in the Main Menu and press <Enter>. The following message appears:

<div align="center">

"Enter Password:"

</div>

2. Enter a password and press <Enter>.
    (If you do not wish to use the password function, you can just press <Enter> and a "Password disabled" message appears.)

3. After you enter your password, the following message appears prompting you to confirm the new password:

<div align="center">

"Confirm Password:"

</div>

4. Re-enter your password and then Press <ESC> to exit to the Main Menu.

Important: If you forget or lose the password, the only way to access the system is to set jumper JP5 to clear the CMOS RAM. All setup information is lost and you must run the BIOS setup program again.

User Password

Based on the setting you made in the "Security Option" of the "BIOS FEATURES SETUP", this Main Menu item lets you configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program. Change the password as follows:

1. Choose "USER PASSWORD" in the Main Menu and press <Enter>. The following message appears:

<p align="center">**"Enter Password:"**</p>

2. Enter a password and press <Enter>.
    (If you do not wish to use the password function, you can just press <Enter> and a "Password disabled" message appears.)

3. After you enter your password, the following message appears prompting you to confirm the new password:

<p align="center">**"Confirm Password:"**</p>

4. Re-enter your password and then Press <ESC> to exit to the Main Menu.

5. You are not allowed to change any setting in "CMOS SETUP UTILITY" except change user's password.

Important: ***If you forget or lose the password, the only way to access the system is to set jumper JP5 to clear the CMOS RAM. All setup information is lost and you must run the BIOS setup program again.***

IDE HDD Auto Detection

This Main Menu item automatically detects the hard disk type and configures the STANDARD CMOS SETUP accordingly.

Note: *This function is only valid for **IDE** hard disks.*

```
                      ROM PCI/ISA BIOS
                     CMOS SETUP UTILITY
                    AWARD SOFTWARE, INC.
```

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master : None	0	0	0	0	0	0	----
Primary Slave : None	0	0	0	0	0	0	----
Secondary Master : None	0	0	0	0	0	0	----
Secondary Slave : None	0	0	0	0	0	0	----

```
          Do you accept this drive C (Y/N)? N

                      ESC : Skip
```

Quick Installation Guide

This Quick Installation Guide leaflet is designed for those people who are familiar with motherboard settings to set up this new motherboard in order to boot up the system. Refer back to the proper chapters if you have run in to any problems.
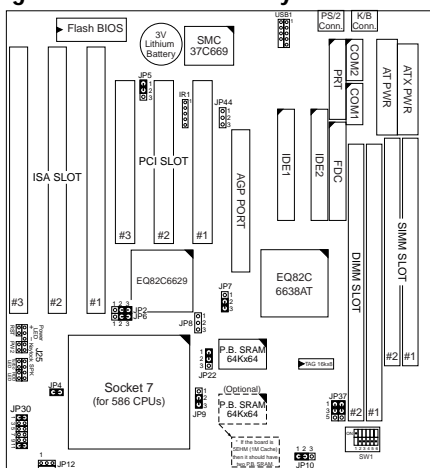
Diagram 1: Motherboard Layout

Table 1: Memory Configurations

	SIMM Bank	DIMM Bank	
		DIMM 1	DIMM 2
RAM Type	FPM/EDO	FPM/EDO/SDRAM	FPM/EDO/SDRAM
Single RAM Module Size (MB)	4/8/16/32	8/16/32/64/128	8/16/32/64/128

Note: *Do not install FPM or EDO SIMM/DIMM when you already installed SDRAM type of DIMM.*

Table 2: Jumper Settings

CMOS clear: JP5		AT Power Supply Connector: CN1	CPU Cooling Fan Connector: JP12		
Retain CMOS data (default)	1-2	please insert the AT power supply plug into this header.	pin	1	2	3
			function	GND	12V	NC
		ATX Power Supply Connector: P1	**RST**	**HD Led**	
Clear CMOS data	2-3	please insert the ATX power supply plug into this header.	Connect the reset button to this jumper	Connect the HDD led to this jumper	
USB1		**PRT**	**SPEAK**	**Keylock**	
Plug the USB cable into this connector		printer cable header	Connect the cable of speakers to this jumper	Connect keyboard lock switch to this jumper	

					Power Supply Selection Jumpers: JP2, JP6	
IrDA (Infrared Devices Connector): IR					AT (default)	2–3

pin	1	2	3	4	5			**Wake-On-LAN Header**	**: JP44**	
function	Vcc	Empty	IRRX	GND	IRTX	ATX	1–2	pin	1	2	3
DIMM Voltage: JP37		**Burst Mode: JP22**		**Power Switch: PW2**			function	5V	END	Sensor
3.3V DIMM (default)	1–3 and 2–4	1–2	Intel, AMD	Connect your power switch to this jumper (momentary switch type)			**TB Led**		**PW Led**	
5V DIMM	3–5 and 4–6	2–3	Cyrix				Connect the Turbo led to this jumper		Connect the power led to this jumper	

Host Bus Frequency Selection Jumper: JP7, JP8

JP7	JP8	CPU	AGP	PCI
2-3 (default)	open (default)	66	66	33
1-2	2-3	100	66	33

SDRAM Frequency Selection Jumper: JP9, JP10

JP9	2-3 (default)	SDRAM frequency is the same as CPU frequency (60/66/75/83/100 MHz)
	1-2	SDRAM frequency is the same as AGP frequency (66 MHz)
JP10	1-2 (default)	SDRAM is running at CPU frequency
	2-3	SDRAM is running at AGP frequency

Jumper Settings for CPU Voltage & Frequency

Voltage Settings: JP30

Voltage	1–2	3–4	5–6	7–8	9–10	11–12
single 3.52V	close	open	open	open	open	close
singel 3.3V	close	open	open	open	close	open
dual 3.2V	close	open	open	close	open	open
dual 2.9V	close	open	close	open	open	open
dual 2.8V	close	open	open	open	open	close
dual 2.2V	open	close	open	open	open	open

CPU Frequency Settings: SW1

Frequency	4	5	6	Multiplier	1	2	3
60 Mhz	on	off	off	1.5/3.5x	off	off	off
66 Mhz	on	on	on	2.0x	on	off	off
75 Mhz	off	on	off	2.5x	on	on	off
83 Mhz	on	on	off	3.0x	off	on	off
100 Mhz	off	off	on	4.0x	on	off	on
				4.5x	on	on	on

Settings for Various Processors

Settings	CPU Frequency: SW1								CPU Voltage: JP30							JP7	JP8	JP9	JP10	SDRAM Timing
Porcessor	Bus Clock	Multiplier	1	2	3	4	5	6	Voltage	1-2	3-4	5-6	7-8	9-10	11-12					
AMD K5 PR90	60MHz	1.5x	off	off	off	**on**	off	off	3.52V	**close**	open	open	open	open	**close**					
AMD K5 PR100	66MHz	1.5x	off	off	off	off	off	off												
AMD K5 PR120	60MHz	1.5x	off	off	off	**on**	off	off	The AMD K5 and K6 come in several versions with different voltages.											
AMD K5 PR133	66MHz	2.0x	**on**	off	off	off	off	off	Please verify the correct voltage settings with your dealer before installation.							2-3	open (default)	2-3	1-2	8ns/10ns
AMD K5 PR150	60MHz	2.5x	**on**	**on**	off	**on**	off	off	The most common K5 runs on 3.52V.											
AMD K5 PR166	66MHz	2.5x	**on**	**on**	off	off	off	off												
AMD K6 PR166	66MHz	2.5x	**on**	**on**	off	off	off	off	2.9V	**close**	open	**close**	open	open	open					
AMD K6 PR200	66MHz	3x	off	**on**	off	off	off	off	2.9V	**close**	open	**close**	open	open	open					
AMD K6 PR233*	66MHz	3.5x	off	off	off	off	off	off	3.2V	**close**	open	open	**close**	open	open					
AMD K6 3D	100MHz	2.5x	**on**	**on**	off	off	off	**on**	2.2V	open	**close**	open	open	open	open	1-2	2-3	2-3 / 1-2	1-2 / 2-3	8ns or faster
Cyrix 6x86 P150+	60MHz	2.0x	**on**	off	off	**on**	off	off	The Cyrix 6x86(L) and MX come in several versions with different											
Cyrix 6x86 P166+	66MHz	2.0x	**on**	off	off	off	off	off	voltages. Please ask your dealer for the correct voltage.											
Cyrix 6x86 P200+	75MHz**	2.0x	**on**	off	off	off	off	off								2-3	open (default)	2-3	1-2	
Cyrix 6x86 PR166*	60/2.5	66/2.0	**on**	**on**	off	**on**	off	off	2.9V	**close**	open	**close**	open	open	open					
Cyrix 6x86 PR200*	66/2.5	75/2.0**	**on**	**on**	off	off	off	off	2.9V	**close**	open	**close**	open	open	open					
Cyrix 6x86 PR233	75MHz**	2.5x	**on**	**on**	off	off	**on**	off	2.9V	**close**	open	**close**	open	open	open					8ns/10ns
Cyrix 6x86 PR266	83MHz	2.5x	**on**	**on**	off	off	**on**	off	2.9V	**close**	open	**close**	open	open	open	1-2	2-3	2-3	1-2	
P54C P90	60MHz	1.5x	off	off	off	**on**	off	off	The P54C (standard Pentium) comes in several versions with different											
P54C P100	66MHz	1.5x	off	off	off	off	off	off	voltages. Please ask your dealer for the correct voltage.											
P54C P120	60MHz	2.0x	**on**	off	off	**on**	off	off	The most common P54C runs on 3.3V											
P54C P133	66MHz	2.0x	**on**	off	off	off	off	off	3.3V	**close**	open	open	open	**close**	open	2-3	open (default)	2-3	1-2	
P54C/P55C P150	60MHz	2.5x	**on**	**on**	off	**on**	off	off												
P54C/P55C P166	66MHz	2.5x	**on**	**on**	off	off	off	off	The P55C (MMX) processors have the same voltage setting:											
P54C/P55C P180	60MHz	3x	off	**on**	off	**on**	off	off												
P54C/P55C P200	66MHz	3x	off	**on**	off	off	off	off												
P55C P233	66MHz	3.5x	off	off	off	off	off	off	2.8V	**close**	open	open	open	open	**close**					

* There are two versions of these MX CPUs. Set the frequency according to the markings on the CPU.
** When using the 75MHz bus clock CPUs, remember that you should not install the AGP VGA card due to the speed limitation of AGP bus. (The max. speed of AGP bus is 66MHz.)