SOYO™

About This Guide

This User's Guide is for assisting system manufacturers and end users in setting up and installing the mainboard. Information in this guide has been carefully checked for reliability; however, no guarantee is given as to the correctness of the contents. The information in this document is subject to change without notice.

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5S A2/A5 SERIAL

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1   Introduction

The Pentium / P54C PCI mainboard is a high-performance system board that supports a Pentium P54C CPU running at 75 / 90 / 100MHz. You can install 256K to 2M of external cache memory on the mainboard. The mainboard is fully compatible with industry standards, and adds many technical enhancements.

Key Features

- P54C CPU running at 75MHz, 90MHz or 100MHz bus speed
- Integrated Second Level (L2) Cache Controller
- Write Through and Write Back Cache Modes
- Direct Mapped Organization
- Supports 256K to 2M cache sizes
- Integrated DRAM Controller
- Concurrent Write Back
- CAS#-before-RAS# Transparent DRAM Refresh
- 256K, 512K, 1M, 2M, 4M, or 16M x N 70ns Fast Page and EDO DRAM (72-pin SIMM)
- On-board memory configurations up to 512Mbytes
- One Programmable Non-Cacheable Region
- Option to Disable Local Memory in Non-Cacheable Regions
- Shadow RAM in Increments of 16 Kbytes
- Supports Pentium / P54C SMM Mode
- Supports CPU Stop Clock
- Supports "Table-Free" DRAM configuration
- PCI/Host Bridge compliant to PCI specifications v2.0
- Four 32-bit PCI slots (Masters) and Four ISA slots
- 4-layer PCB
- System BIOS supports NCR810 SCSI Card BIOS
- On-board built-in Local Bus IDE controller and Floppy controller
- On-board support for two high speed UARTS (w/ 16550 FIFO) and Multimode parallel port for Standard, Enhanced (EPP) and high speed (ECP) modes.

Unpacking the Mainboard

The mainboard package contains:

- The Pentium / P54C Mainboard

- This User's Guide

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*

*Default settings: Pentium (P54C) 90MHz CPU, 256K W/B cache, EPROM BIOS, On-board Local Bus IDE Enabled, 2 serial ports (w/ 16550), 1 EPP/ECP port (standard mode.)
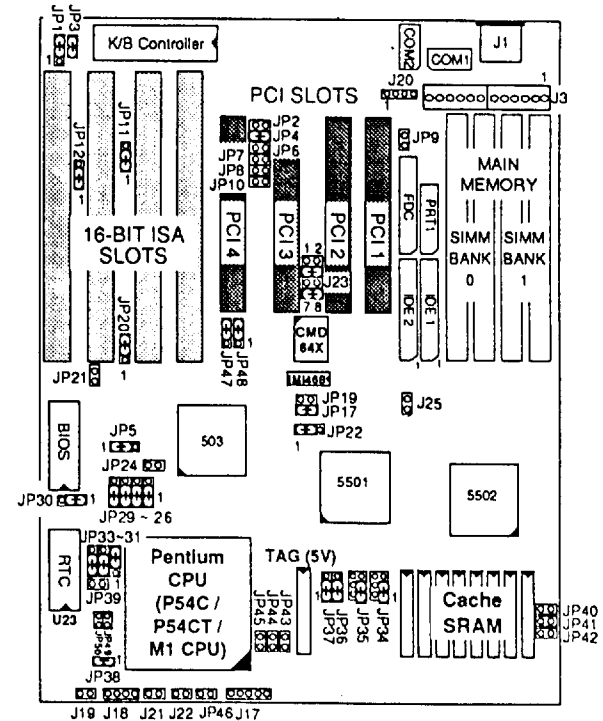

Figure 1-1. Mainboard Layout

Important: *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

Factory Set Jumpers

The following jumpers are set at the factory as below.

Jumpers	Factory settings
JP12, JP26, JP27, JP28, JP29, JP32, JP33, JP22	Factory setting* at 1-2
JP1, JP20, JP30, JP31	Factory setting* at 2-3
JP2, JP9, JP21, JP24	Factory setting* at Open
JP39	same as JP5 except for external RTC clear.
JP4	Factory setting* at Short

* This setting may change due to circuit modifications or to a different chipset version. This manual may not reflect changes. It is recommended that you keep the settings as they are on the mainboard.

JP3: Display Type

Set JP3 to configure the mainboard for use with either a color or monochrome monitor.

Monitor Type	JP3
Monochrome	[• •] 1 2
EGA/VGA (default)	[• •] 1 2

JP6~JP8, JP10: ECP DMA Select

These jumpers set the ECP DMA for DRQ3/DACK3 or for DRQ7/DACK7.

ECP DMA Select	JP6	JP7	JP8	JP10
DRQ3 / DACK3	[• •] 1 2	[• •] 1 2	[• •] 1 2	[• •] 1 2
DRQ7 / DACK7	[• •] 1 2	[• •] 1 2	[• •] 1 2	[• •] 1 2
None (Default)	[• •] 1 2	[• •] 1 2	[• •] 1 2	[• •] 1 2

JP47, JP48, J23 (pins 5-6): On Board IDE Enable/Disable

Set JP47, JP48, and J23 (pins 5-6) to enable or disable the on-board IDE.

On-Board IDE	JP48 (Primary)	JP47 (Secondary)	J23 (pins 5-6)
Enabled (Default)	[• • •] 3 2 1	[• • •] 3 2 1	5 [• •] 6
Disabled	[• • •] 3 2 1	[• • •] 3 2 1	5 [• •] 6

J23: On-Board IDE Controller Setting

J23 is an 8-pin jumper that sets the on-board IDE Controller.

J23 (Pins 1-8)		Description
Pins 1-2		Factory setting at Open
Pins 3-4		Factory setting at Short
Pins 5-6	[• •] 1 2	Enable On-board IDE (default)
	[• •] 1 2	Disable On-board IDE
Pins 7-8*	[• •] 1 2	Enable Second IDE channel (default)
*Note:This setting must match the BIOS setting. (see page 26)	[• •] 1 2	Disable Second IDE channel

JP39/JP5: CMOS Reset Jumpers

Jumpers JP39 and JP5 let you discharge CMOS memory in the event you forget your password or encounter a BIOS Setup problem. Before you install the mainboard make sure that JP39 and JP5 are set to retain CMOS memory.

CMOS Setting	JP39	JP5
Retain CMOS data (default)	[• •] 1 2	[• • •] 1 2 3
Discharge CMOS	[• •] 1 2	[• • •] 1 2 3
Note:	JP39 is for External RTC use (RTC present in U24)	
	JP5 is for Internal RTC use (RTC *not* present in U24)	

CPU Type Configuration

Set the mainboard's CPU jumpers according to CPU type as described below.

Pentium - 75/90/100 CPU Settings
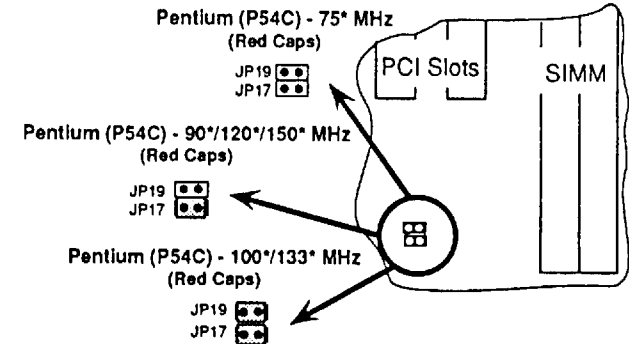
Figure 2-1. CPU Jumper Settings

* You must equip the CPU with a fan and heat sink for system stability.

JP49, JP50 : Bus Fraction Core/Bus Ratio Select

Set this jumper according to your CPU clock.

Note: For Pentium X / Y Mhz, X stands for CPU core clock, Y stands for bus clock.

Ratio	P54CX Family	JP50	JP49
2/1	Pentium - (100 / 50) MHz Pentium - (120 / 60, 133 / 66) MHz Pentium - (133 / 66) MHz	[• •] 1 2	[• •] 1 2
3/2 (Default)	Pentium - (100/ 66, 90 / 60, 75 / 50) MHz Pentium - (100/ 66) MHz	[• •] 1 2	[• •] 1 2
5/2	Pentium - (150/ 60) MHz	[• •] 1 2	[• •] 1 2

Cache Configuration

The mainboard has a write-back caching scheme. You can configure the mainboard's cache by installing cache chips in the sockets noted below. See Figures 2-2~2-7 for cache configurations.

Note: *This mainboard supports 1M and 2M cache capability, however, the board maker does not provide 1M and 2M cache components.*

Cache Size and RAM Locations

Cache Size	Cache RAM	TAG RAM	Cacheable Range
256KB	32K x 8 / U26-U34	8K x 8 / U36 16K x 8 / U36	32MB
512KB (1 Bank)	64K x 8 / U26-U34	16K x 8 / U36	64MB
512KB (2 Banks)	32K x 8 / U26-U34 : U38-U45	16K x 8 / U36	64MB
1 MB (1 Bank)	128K x 8 / U26-U34	32K x 8 / U36	128MB
1 MB (2 Banks)	64K x 8 / U26-U34 : U38-U45	32K x 8 / U36	128MB
2 MB (2 Banks)	128K x 8 / U26-U34 : U38-U45	64K x 8 / U36	256MB

JP40~JP42, JP43~JP45: SRAM Type Select (Factory Setting)

The mainboard is set at the factory for either **3.3V SRAM** or for **Mixed SRAM**. Only one setting at a time is possible.

3.3V SRAM consists of 3.3V Power and 3.3V I/O interface.

Mixed SRAM consists of 5V Power and 3.3V I/O interface.

Setting	JP40~JP41	JP43~JP45
3.3V SRAM		
Mixed SRAM		

CAUTION: *These two groups of jumpers are set at the factory. Do not change the settings on your mainboard, otherwise you may damage the mainboard's SRAM.*

JP38: CPU Voltage Select

Set JP38 to configure the proper voltage for the installed CPU.

CPU Type Voltage	JP38
Standard and VR P54C CPU (3.3V + 5%) (Default)	
VRE P54C CPU (3.45V ~ 3.6V)	
Reserved	

256K Cache Configuration (1 Bank)
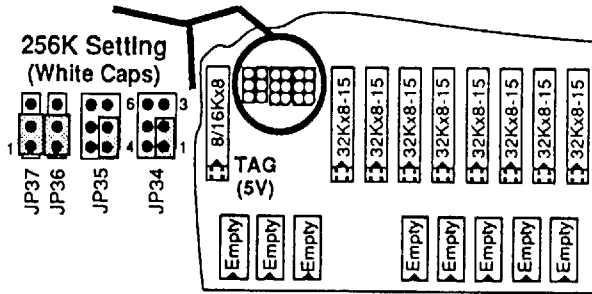
Figure 2-2. 256K Cache Configuration with 32K x 8 (1 Bank)

512K Cache Configuration (1 Bank)
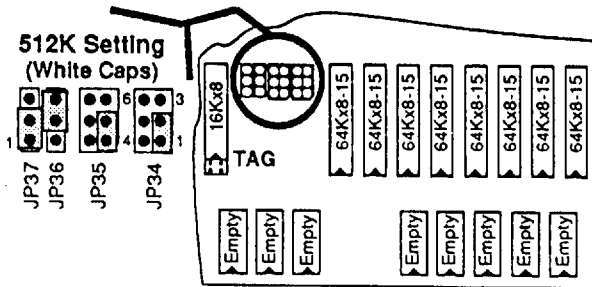
Figure 2-3. 512K Cache Configuration with 64K x 8 (1 Bank)

512K Cache Configuration (2 Banks)
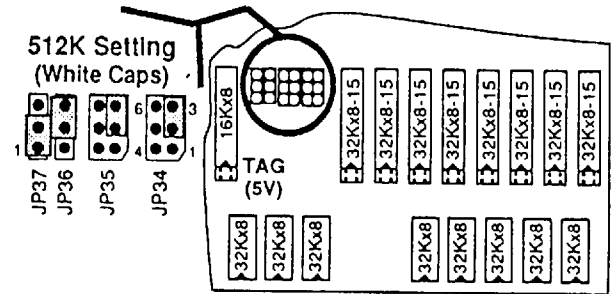
Figure 2-4. 512K Cache Configuration with 32K x 8 (2 Banks)

1M Cache Configuration (1 Bank)
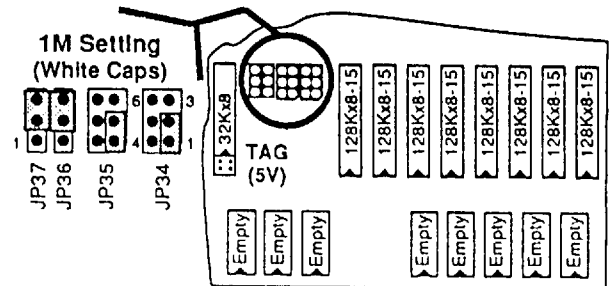
Figure 2-5. 1M Cache Configuration with 128K x 8 (1 Bank)

1M Cache Configuration (2 Banks)
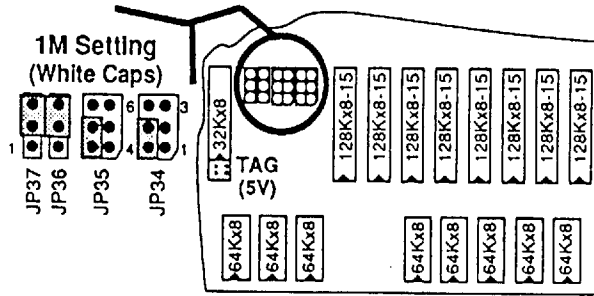
Figure 2-6. 1M Cache Configuration with 64K x 8 (2 Banks)

2M Cache Configuration (2 Banks)
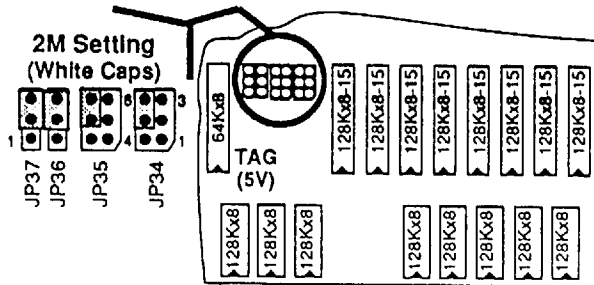
Figure 2-7. 2M Cache Configuration with 128K x 8 (2 Banks)

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*	3BCH	7	Standard Parallel Port
COM1	3F8H	4	
COM2	2F8H	3	

* LPT1 is default for standard mode. If you want ECP/EPP functions you must use the BIOS or drivers settings. You must also set JP6~JP8 and JP10 to configure DRQ/DACK. If the 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 port addresses from the BIOS. See page 26.)

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.*

Memory Configuration

The mainboard supports eight banks of 72-pin SIMM or EDO DRAM. The mainboard requires SIMM of at least 80ns access time.

Single-side SIMM	Double-side SIMM
1MB = 256K x 36(32)	2MB = 512K x 36(32)
4MB = 1MB x 36(32)	8MB = 2MB x 36(32)
16MB = 4MB x 36(32)	32MB = 8MB x 36(32)
64MB = 16MB x 36(32)	

There are no restrictions on memory configurations. You can install DRAM in any combination without having to rely on a memory configuration table. Memory configuration is thus "Table-Free."
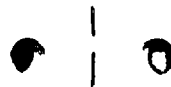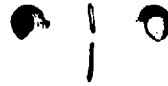
Connectors

Attach the Pentium mainboard to case devices, or an external battery, via connectors on the mainboard. Refer to Figure 1-1 for connector locations and connector pin positions.

JP46 - Sleep Switch Connector

Attach a sleep switch to this connector. Closing the Sleep switch forces the system to enter Suspend mode. This switch can be enabled or disabled by the BIOS.

J1 - Keyboard Connector

A five-pin female DIN keyboard connector is located at the rear of the board. Plug the keyboard jack into this connector.

J3 - Power Supply Connectors

The mainboard requires a power supply with at least 200 watts and a "power good" signal. J3 has two six-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.
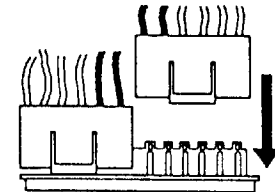
J17 - Keylock & Power LED Connector

J17 is a connector for a lock that may be installed on the system case for enabling or disabling the keyboard. J17 also attaches to the case's Power LED.

J18 - Speaker Connector

Attach the system speaker to connector J18.

J19 - Hardware Reset Control

Attach the Reset switch to J19. Closing the Reset switch restarts the system.

J21 - Turbo Switch Connector

J21 is connected to a Turbo switch on the front of the system case. The connector is open for turbo operation and shorted for normal operation.

J22 - Turbo LED Connector

Attach the sleep LED to J22. The LED lights when the system is in Turbo mode.

CON1/CON2 - On-board Primary/Secondary HDD Connectors

Attach on-board hard disk drives to these connectors.

J25 - On-board HDD LED Connectors

Attach on-board hard disk drive LEDs to these connectors. The LEDs light when the HDD is active.

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        │  PASSWORD SETTING        │
│                             │                          │
│  BIOS FEATURES SETUP        │  IDE HDD AUTO DETECTION   │
│                             │                          │
│  CHIPSET FEATURES SETUP     │  SAVE & EXIT SETUP       │
│                             │                          │
│  POWER MANAGEMENT SETUP     │  EXIT WITHOUT SAVING     │
│                             │                          │
│  PCI CONFIGURATION SETUP    │                          │
│                             │                          │
│  LOAD SETUP 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) : Fri, Feb 1 1995
 Time (hh:mm:ss) :  7 : 30 : 33

 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    ....

 Drive A : 1.44M, 3.5 in.
 Drive B : None                      Base Memory:    640K
                                 Extended Memory:   3328K
 Video   : EGA/VGA                  Other Memory:    128K
 Halt On : All Errors

                                     Total Memory:   4096K

 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 (Secondary)   Choose from the standard hard disk types 1 to 46. Type
Master & Slave   47 is user definable. If a hard disk is not installed choose "Not installed." (default)

Drive A & B   Choose   360KB , 5 1/4",
   1.2MB , 5 1/4",
   720KB , 3 1/2",
   1.4M , 3 1/2"(default),
   2.88 MB, 3 1/2" or
   Not installed

Video   Choose   Monochrome,
   Color 40x25,
   VGA/EGA (default),
   Color 80x25

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.

 CPU Internal Cache      : Enabled    Video BIOS Shdow     : Enabled
 External Cache          : Enabled    C8000-CBFFF Shadow   : Disabled
 Quick Power on Self Test : Enabled   CC000-CFFFF Shadow   : Disabled
 Boot Sequence           : A,C        D0000-D3FFF Shadow   : Disabled
 Swap Floppy Drive       : Disabled   D4000-D7FFF Shadow   : Disabled
 Boot Up NumLock Status  : On         D8000-DBFFF Shadow   : Disabled
 IDE HDD Block Mode      : Enabled    DC000-DFFFF Shadow   : Disabled
 Memory Parity Check     : Disabled
 Typematic Rate Setting  : Disabled
 Typematic Rate (Chars/Sec): 6
 Typematic Delay (Msec)  : 250
 Security Option         : Setup

                                      ESC : Quit      ↑↓→←: Select Item
                                      F1  : Help      PU/PD/+/- : Modify
                                      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. <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:

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	The default setting attempts to first boot from drive A: and then from hard disk C:. You can reverse this sequence with "C: A:", but then drive A: cannot boot directly.
Swap Floppy Drive	Enabled changes the sequence of the A: and B: drives. (The Default setting is Disabled.)
Boot Up Num Lock Status	Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts this keypad in arrow key mode at boot-up.
IDE HDD Block Mode	This option enables/disables the IDE HDD Block Mode function. Not all HDDs support this function. (The Default setting is Enabled.)
Memory Parity Check	Choose Enabled or Disabled. This item enables/disables the Memory Parity check option.
Typematic Rate Setting	Enable this option to adjust the keystroke repeat rate.
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.
Video or Adaptor BIOS Shadow	BIOS shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM. These 32K segments can be shadowed from ROM to RAM. BIOS is shadowed in a 32K 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.

 ┌──────────────────────────────┬────────────────────────────────────┐
 │ Auto Configuration  : Enabled│ PCI Clock Frequency    : CPUCLK/2   │
 │                              │ ISA Bus Clock Frequency : PCICLK/4   │
 │ Read CAS Pulse Width    : 3T │ Non-Cacheable Block 1   : Disabled  │
 │ DRAM Write CAS Width    : 2T │   Block 1 Start Address : 0500000H  │
 │ L1 Cache Update Mode    : WB │   Block 1 Size          : 64KB      │
 │ L2 Cache Update Mode    : WB │                                     │
 │ SRAM Speed Option   : Slower │                                     │
 │ SRAM Burst R/W Cycle    : 3T │                                     │
 │ Refresh RAS Active Time : 5T │                                     │
 │ DRAM RAS to CAS Delay   : 4T │                                     │
 │ DRAM RAS Precharge Time : 5T │                                     │
 │ System BIOS Cacheable : Disabled│                                  │
 │ Video BIOS Cacheable  : Disabled├─────────────────────────────────│
 │                              │ ESC : Quit      ↑↓→←: Select Item   │
 │                              │ F1  : Help     PU/PD/+/- : Modify   │
 │                              │ F5  : Old Values (Shift)F2 : Color  │
 │                              │ 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:

Auto Configuration — Enable this option (strongly recommended) and the system automatically sets all options on the left side of the screen (except cache update mode & BIOS cacheable).

If this option is Enabled you must boot from Turbo mode.

Read CAS Pulse Width — Use the default setting.

DRAM Write CAS Width — Use the default setting.

L1 (L2) Cache Update Mode — Choose WB or WT. The default setting is WB (Write Back). WB offers better performance than WT.

SRAM Speed Option — Use the default setting.

SRAM Burst R/W Cycle — Use the default setting.

Refresh RAS Active Time — Use the default setting.

DRAM RAS to CAS Delay — Use the default setting.

DRAM RAS Precharge Time — Use the default setting.

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.

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.

PCI Clock Frequency — According to PCI specifications, the PCI clock should be less than or equal to 33MHz. So the BIOS setting is for 30MHz or 33MHz (half the CPU frequency.)

ISA Bus Clock Frequency — The default setting is the PCI Clock (the item above) divided by 4. — i.e. 7.5 MHz (30/4) or 8 MHz (33/4).

Non-Cacheable Block 1 — Choose Enabled or Disabled (default). Select whether the DRAM non-cache area functions are enabled or not.

Block 1 Start Address — Select the non-cache area start address depending on your requirements.

Block 1 Size — Select the non-cache area length depending on your area requirements.

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
           POWER MANAGEMENT SETUP
            AWARD SOFTWARE, INC.

┌─────────────────────────────┬─────────────────────────────────┐
│ Power Management  : Disabled │ VGA Activity      : Disabled    │
│ PM Control by APM : No       │ IRQ 3   (COM 2)   : Enabled     │
│ Video Off Option  : Susp,Stby->Off │ IRQ 4 (COM 1)   : Enabled  │
│ Video Off Method  : V/H SYNC+Blank │ IRQ 5 (LPT 2)   : Enabled  │
│ Suspend Switch    : Enabled  │ IRQ 6   (Floppy Disk) : Enabled │
│                              │ IRQ 7   (LPT 1)   : Enabled     │
│                              │ IRQ 8   (RTC Alarm) : Disabled  │
│      ** PM Timers **         │ IRQ 9   (IRQ2 Redir) : Enabled  │
│ HDD Power Down    : Disabled │ IRQ 10  (Reserved)  : Enabled   │
│ Doze Mode         : Disabled │ IRQ 11  (Reserved)  : Enabled   │
│ Standby Mode      : Disabled │ IRQ 12  (PS/2 mouse) : Enabled  │
│* Suspend Mode     : Disabled │ IRQ 13  (Coprocessor) : Enabled │
│                              │ IRQ 14  (Hard Disk) : Enabled   │
│      ** PM Events **         │ IRQ 15  (Reserved)  : Enabled   │
│ COM Ports Activity  : Enabled │                                │
│ LPT Ports Activity  : Enabled │ ESC : Quit    ↑↓→←: Select Item│
│ HDD Ports Activity  : Enabled │ F1  : Help    PU/PD/+/- : Modify│
│ PCI/ISA Ports Activity: Enabled │ F5 : Old Values (Shift)F2 : Color│
│                              │ F6  : Load BIOS Defaults        │
│                              │ F7  : Load Setup Defaults       │
└─────────────────────────────┴─────────────────────────────────┘
```

*This item is only for the P54C CPU (SY-033 SERIAL).

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.
Disabled	Disables the Green PC Features.
Min Saving	Doze timer = 40 Min Sleep timer = 40 Min Inactive timer = 40 Min
Max Saving	Doze timer = 20 Sec Sleep timer = 20 Sec Inactive timer = 20 Sec

PM Control by APM	Choose Yes or No (default). APM stands for Advanced Power Management. To use APM you must run "power.exe" under DOS v6.0 or later version.
Video Off Option	When the selected PM mode occurs, the monitor screen shuts off. If any IRQ event occurs, the screen comes back on.
Video Off Method	Choose V/H Sync+Blank (default) o Blank screen for the selected PM mode. (See the Video Off Option.)
Suspend Switch	Choose Enabled (default) o Disabled. This option enables or disables JP46 (see page 15).
PM Timers:	
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 20 seconds to 40 minutes.
Standby Mode	The default is Disabled. Time is adjustable from 20 seconds to 40 minutes.
Suspend Mode	The default is Disabled. Only an SL-Enhanced (or SMI) CPU can enter this mode. Time is adjustable from 20 seconds to 40 minutes. Under inactive mode, the CPU stops completely (no instructions are executed.)
PM Events	The BIOS monitors these items for activity. If activity occurs from the Enabled item the system will not enter Green mode (power saving), or the system wakes up.

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

PCI Configuration Setup

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

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

```
                    ROM PCI/ISA BIOS
                  PCI CONFIGURATION SETUP
                    AWARD SOFTWARE, INC.
┌──────────────────────────────────────────────────────────────────┐
│ SLOT 1 Using INT #    : AUTO       Onboard FDC Control    : Enabled│
│ SLOT 2 Using INT #    : AUTO       Onboard Serial Port 1  : COM1/3F8H│
│ SLOT 3 Using INT #    : AUTO       Onboard Serial Port 2  : COM2/2F8H│
│ SLOT 4 Using INT #    : AUTO       Onboard Parallel Port  : 3BCH/IRQ7│
│                                    Onboard Printer Mode   : Compatible│
│ 1st Available IRQ     : 9                                           │
│ 2nd Available IRQ     : 10                                          │
│ 3rd Available IRQ     : 11                                          │
│ 4th Available IRQ     : 12                                          │
│ PCI IRQ Activated By  : Edge                                       │
│ PCI IDE IRQ Map To    : PCI-AUTO                                    │
│  Primary IDE INT#     : A                                          │
│  Secondary IDE INT#   : B                                          │
│                                                                    │
│                            ESC : Quit        ↑↓→←  : Select Item   │
│                            F1  : Help     PU/PD/+/- : Modify       │
│                            F5  : Old Values (Shift)F2 : Color      │
│                            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:

Slot 1 (2) (3) (4) Using INT#	Choose AUTO or assign PCI INT# number A, B, C, or D. The default setting is AUTO.
1st (2nd) (3rd) (4th) Available IRQ	If slot 1-4 is set to AUTO in the item above, then the BIOS automatically routes the INT# to the specified IRQ following the 1st (2nd) (3rd) (4th) IRQ order you assign.
PCI IRQ Activated By	Choose Edge or Level. Most PCI trigger signals are Level. This setting must match the PCI card.

PCI IDE IRQ Map To	Select PCI-AUTO, ISA, or assign a PCI SLOT number (depending on which slot the PCI IDE is inserted). The default setting is PCI-AUTO. If PCI-AUTO does not work, then assign an individual PCI SLOT number.
Primary IDE INT#	Choose INTA#, INTB#, INTC#, or INTD#. The default setting is INTA#.
Secondary IDE INT#	Choose INTA#, INTB#, INTC#, or INTD#. The default setting is INTB#.

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.

Password Setting

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

    "Enter Password:"

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:

    "Confirm Password:"

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.**

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.

                          CYLS.   HEADS   PRECOMP   LANDZONE   SECTORS
    Drive C : User (  49Mb)   790     15      65535      789        57
    Drive D : User (   0Mb)     0      0          0        0         0

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

                          ESC : Skip
```