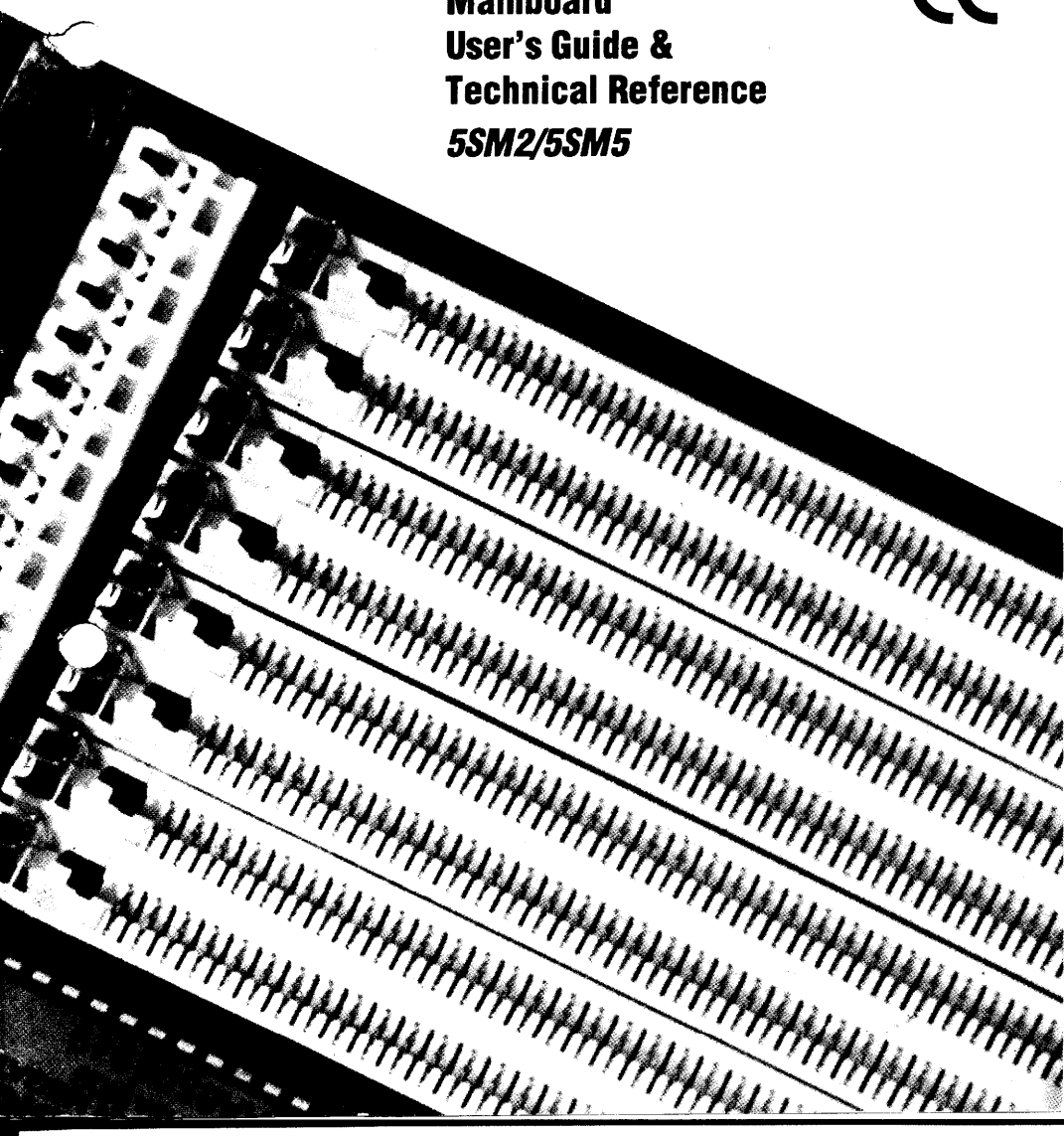
Pentium

SiS 551x / P54C PCI
Mainboard
User's Guide &
Technical Reference

5SM2/5SM5

CE



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1 Introduction

The SiS 551X / P54C PCI ma inboard is a high-performance system board that supports Pentium P54CX and Cyrix 6x86 family CPUs. You can install 256K to 512K of external cache memory on the mainboard. The mainboard is fully compatible with industry standards, and adds many technical enhancements.

Key Features

- Supports P54CX family CPU running at 75/90/100/120/133/150/166/180/200 MHz speed and Cyrix 6x86 CPU running at 100/120/133/MHz speed.
- **Supports SOCKET** 7 & VRM for upgrade (optional)
- Integrated Second Level (L2) Cache Controller (256K/512K) "
  - Write Through and Write Back Cache Modes
  - Direct Mapped Organization
  - **On-board Pipeline Burst SRAMs Cache and Pipelined Burst module slot support.**
- Integrated DRAM Controller
  - Concurrent Write Back
  - CAS#-before-RAS# Transparent DRAM Refresh
  - 256K, 512K, lM, 2M, 4M, or 16M x N 70ns Fast Page and EDO **DRAM** (symmetric and asymmetric)
  - On-board memory configurations from 2 to 512 Mbytes
  - **Supports single 32 bits SIMM for booting and operating on SIMM 2 and SIMM 4**
- Supports CPU Stop Clock
- Supports "T able-Free"DRAM configuration
- Compliant to PCI specifications v2.0
- Three 32-bit PCI slots (Masters) and Three ISA slots, 4-layer PCB
- System BIOS built-in NCR81O SCSI Card BIOS and **"Plug and Play"** function
- On-board built-in PCI Master IDE controller and floppy controller
- On-board supports for two high speed UARTS (w/i 16550 FIFO) and Multimode parallel port for Standard, Enhanced (EPP) and high speed (ECP) modes, and **supports PS/2 mouse function**
- On-board supports FLASH Memory for easy upgrade BIOS
- On-board SVGA **function and** attaching software **MPEG (optional)**
- **On-board** built-in **Creative** CT-2504 **sound chip (optional)**

Mainboard Layout w/ default settings*

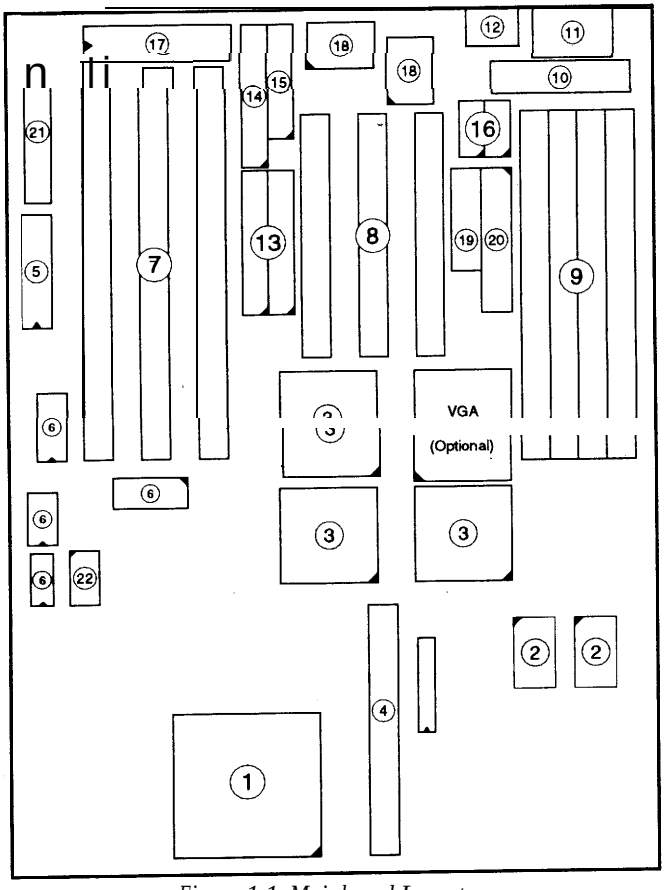


Figure 1-1. Mainboard Layout

1. P54 in ZIF socket 7
2. Pipelined Burst SRAM
3. Sis 551X Chipset
4. Pipelined Burst SKAM Module Slot
5. PnP FLASH BIOS
6. Audio Chipset
7. ISA Slots
8. PCI Slots
9. SIMM Memory Bank
10. 5V DC Power Connector
11. Keyboard Connector
12. PS/2 Mouse Connector
13. IDE1/IDE2 Connector
14. Floppy Connector
15. Parallel Port Connector
16. COM1/COM2 connector
17. Keyboard BIOS
18. super I/O Chipset
19. VGA Connector (optional)
20. VGA Feature Connector (optional)
21. Audio Connector
22. Wave Table Connector

Refer to Figure 1-2 for the mainboard layout and the default settings areas follows: Pentium 100MHz CPU, 256K W/B Pipelined Burst cache, Address Pipeline Enabled, On-board EIDE Enabled (PIO Mode), FDD Enabled, 2 high speed UART Enabled (w/ 16550 FIFO), 1 EPP/ECP port (standard mode), and PS/2 Mouse Disabled.

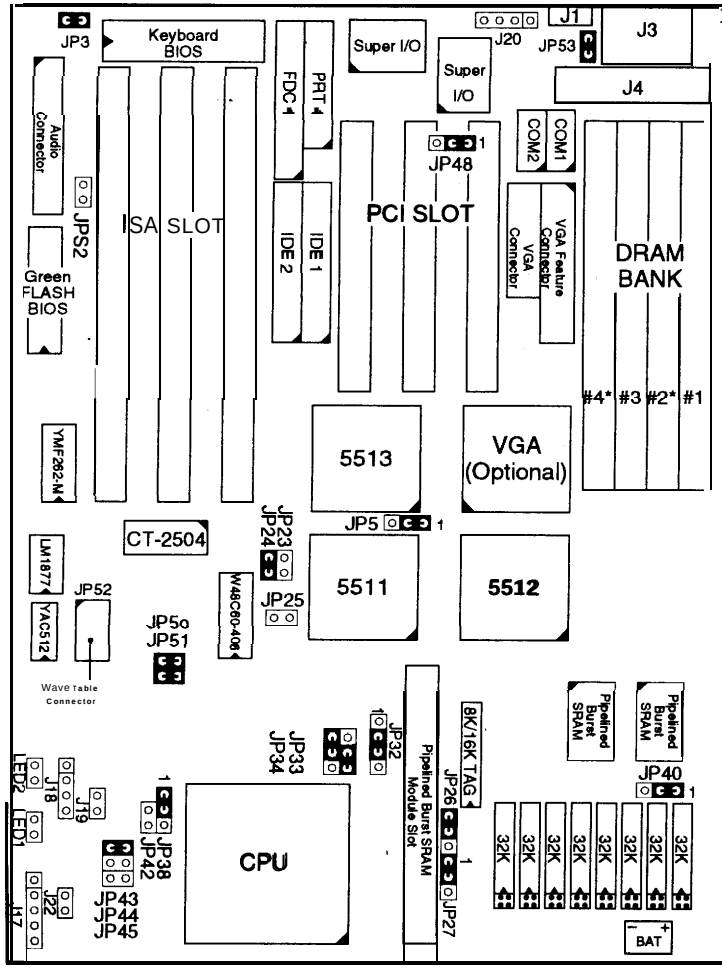


Figure 1-2. Mainboard Layout

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

*Note: SIMM2 and SIMM 4 can install single32 bits SIMM.

Onboard VGA Chip Features (Optional)

- **Supports share memory for both system memory and display memory**
- Supports 32 bit PCI local bus standard revision 2.1
- Supports PCI multimedia design guide revision 1.0
- Supports 32/64 bit display memory path
- Supports VESA DPMS compliant VGA monitor for power management
- Supports resolution up to 1280 x 1024256 colors(NI) or 1280x 102464K colors (Interlace only)
- Supports virtual screen up to **2048 x 2048**
- Supports sofiware MPEG function.

Resolutions Supported

Resolution	1 MByte DRAM*	2 MByte DRAM*
640x480x256	✓	✓
640x480x64K	✓	✓
640x480x16M	✓	✓
800X600X16	✓	✓
800X600X256	✓	✓
800X600X64K	✓	✓
800X600X16M	X	✓
1024x768x16	✓	✓
1024x768x2%	✓	✓
1024x768x64K	X	✓
1024x768x16M	X	X
128OX1O24X16	✓	✓
128OX1O24X256	X	✓

This size is controlled by BIOS and shared with the system main memory.

Note: The VGA online manual can be found in VGA diskettes 1 under the "MANUAL" subdirectory.

Unpacking the Mainboard

The mainboard package contains:

- The SiS 551X / 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 rnainboard 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 darnage 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 rnainboard 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 rnainboard by the edges and avoid touching its components.

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. -

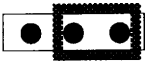
Jumpers	Factory settings
JP28, JP29, JP31, JP36, JP37, JP47	Factory fixed at Short
J21	Reserved
JP5, JP34, JP48, JP53, JP50, JP51	Factory setting at 1-2
JP28, JP29, JP32, JP33, JP47	Factory setting at 2-3
JP30	Factory freed at 3-5 and 4-6

JP25: Sleep Switch Connector Enable/Disable

Toggle this jumper to force the system into power saving (Green) mode. Any hardware IRQ signal makes the system wakeups.

JP34: 11 Write-Back /Write-Through Cache Select

Set JP34 to configure the mainboard for L1 Write-Back/Write-Through Cache.

11 Cache	JP34
Write Back Cache (default)	
Write Through Cache	

JP46: VRM (Voltage Regulator Module) Socket (Optional)

VRM socket is dedicated for 2.5V CPU to use. It converts 3.3V to 2.5V for the advance high speed P54CX.

JPS2: PS/2 Mouse Function Jumper

Set PS/2 mouse function enabled or disabled.

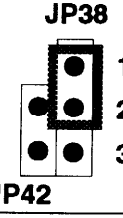
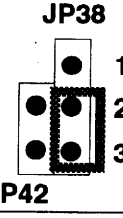
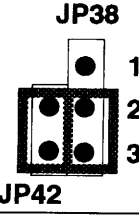
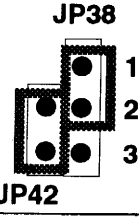
PS/2 Mouse Function	JPS2
Disabled (default)	
Enabled	

Note: The IRQ12 is dedicated to PS/2 mouse when choose enabled of PS/2 Mouse Function.

JP38, JP42: Bus Fraction Core/Bus Ratio Select

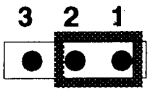
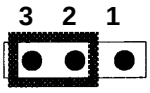
Set this jumper according to your CPU clock and this setting is only for Pentium.

Note: For PentiumX /Y MHz, X stands for CPU core clock, Y stands for bus clock.

Ratio	P54CX Family	JP38, JP42
3/2 (1.5x) (Default)	Pentium – (100/66, 90/60, 75/50)MHz	
2/1 (2x)	Pentium – (100/50)MHz Pentium – (120/60, 133/66)MHz Cyrix – (P120+/50)MHz Cyrix – (P150+/60, P166+/66)MHz	
5/2 (2.5x)	Pentium – (150/60)MHz Pentium – (160/66)MHz	
3/1 (3x)	Cyrix – (P200+/50)MHz (Install JP38 only) Pentium – (180/60)MHz Pentium – (200/66)MHz	

JP40: CPU Burst Mode Select

Set JP40 to select the two different kinds of burst mode which is decided by the type of CPU that you use.

Burst Mode	JP40
Interleave burst for INTEL (default)	
Linear burst for Cyrix	

CPU Type Configuration

Set the mainboard's CPU jumpers JP23 and JP24 according to CPU type as described below, and then set JP43~JP45 for the proper voltage of the CPU.

Pentium - 75*/90*/100* CPU Settings (RED Caps) (1.5x clock)

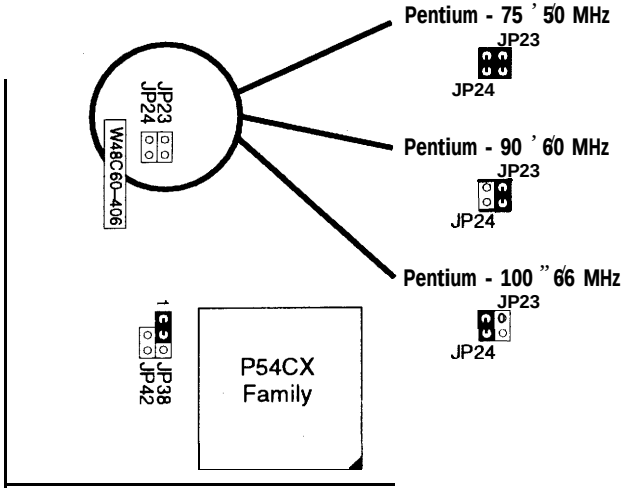


Figure 2-1-1. CPU Jumper Settings

Pentium - 100*/120*/133* CPU Settings (RED Caps) (2.0X clock)

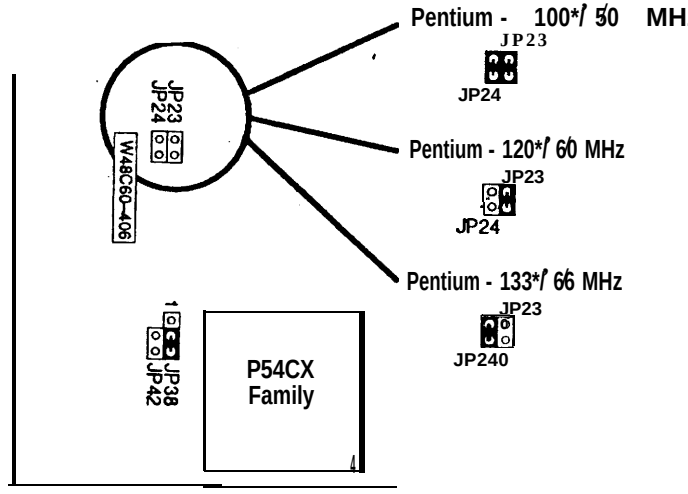


Figure 2-1-2. CPU Jumper Settings

Pentium - 150* CPU Settings (RED Caps) (2.5x clock)

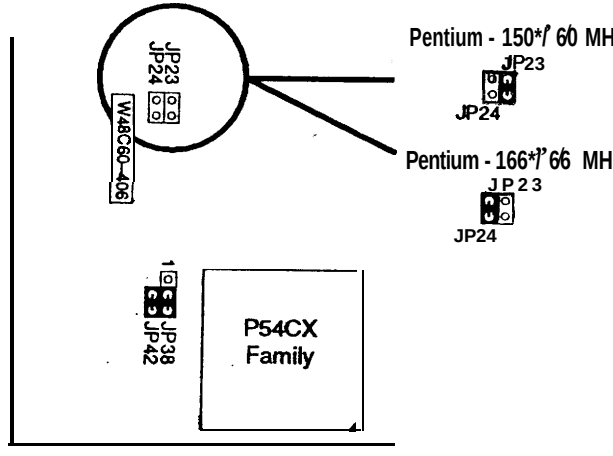


Figure 2-1-3. CPU Jumper Settings

Pentium - 180*/200* CPU Settings (RED Caps) (3.0x clock)

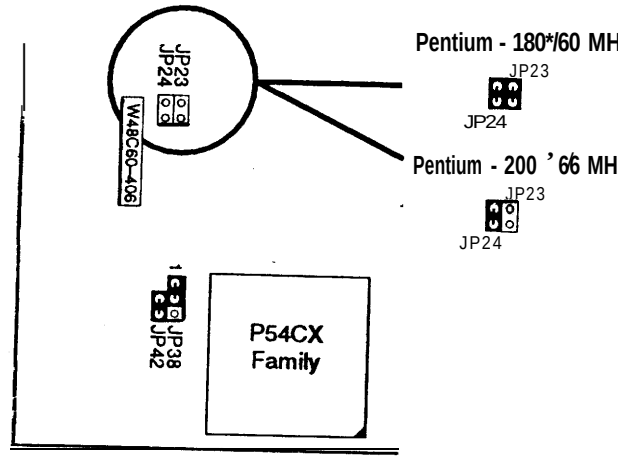


Figure 2-1-4. CPU Jumper Settings

Cyrix 6x66- P120+P150+P166+ CPU Settings (RED Caps) (2.0x clock)

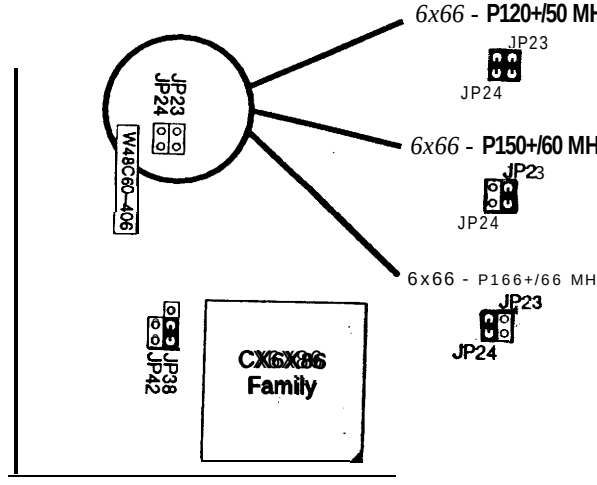


Figure 2-1-5. *CPU Jumper Settings*

Cyrix 6x66- P200+ CPU Settings (RED Caps) (3.0x clock)

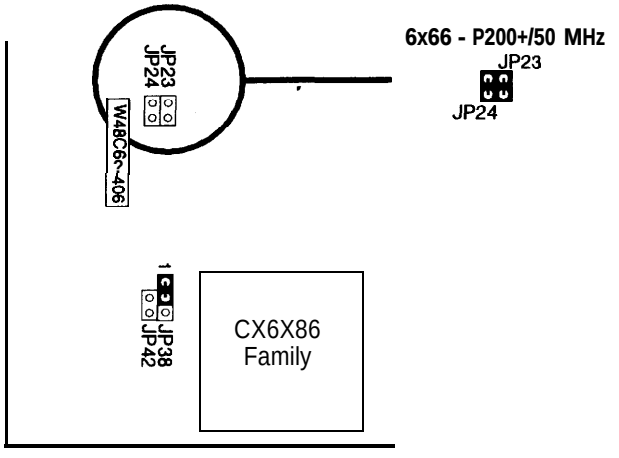


Figure 2-1-6. CPU Jumper Settings

JP43~JP45: CPU Voltage Select

Set JP43~JP45 to configure the Proper voltage for the installed CPU.

CPU Type Voltage	JP43~JP45
Standard and VR P54CX CPU (33V + 5%) (Default)	JP43 JP44. JP45 1
VRE P54CX CPU (345V - 36v)	JP43 JP44 JP45 1
Reserved	JP43 JP44 JP45 1

Note: Check with your CPU vendor to *make sure of the CPU type voltage.*

Memory Configuration

The mainboard supports two banks of 72-pin SIMM **or FDO DRAM (with or without parity). The** mainboard requires SIMM of at least 80ns access time.

The mainboard supports from 2 to 512 Mbytes with no other 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."**

. You can use single 32 bits **DRAM on** SIMM2 and SIMM4.

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 and then set jumpers JP26 and JP27 to set the mainboard for the type of SRAM installed. See Figures 2-2-2-3 for cache configurations,

Cache Size and RAM locations

Cache Size	Cache RAM	TAG RAM	Cacheable Range
256KB	U19, U20	8K, 16Kx8/ U18	32MB
512KB	U19, U20, and 256KB Pipelined Burst upgrade module	16K, 32Kx8/ U18	64MB

256K Pipelined Burst Cache Configuration (White Caps)

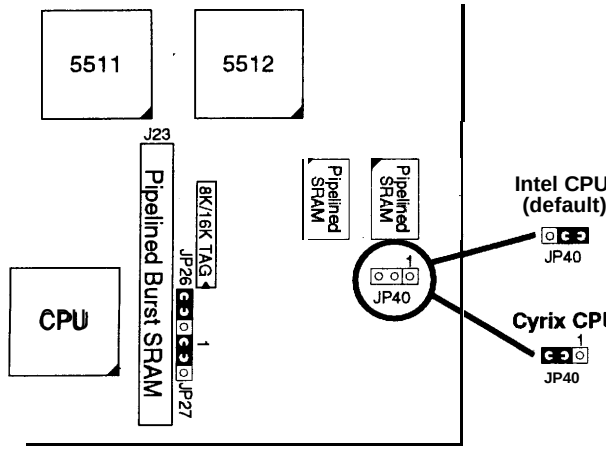


Figure 2-2. 256K Pipelined Burst Cache Configuration

512K **Pipelined Burst Cache Configuration (White Caps)**

A 256KB Pipelined Burst upgrade module has to install into Pipelined Burst Module Slot (J23).

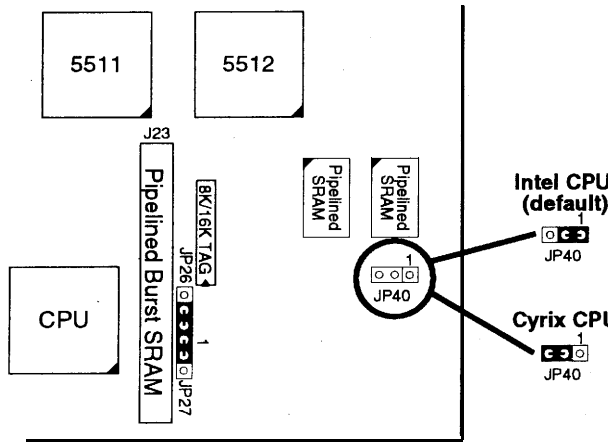


Figure 2-3. 512K Pipelined Burst Cache Configuration

CAUTION: Contact your supplier for Pipelined Burst upgrade module to upgrade your onboard cache SRAM up to 512KB.

Multi I/0 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 1/0 port addresses conflict with other 1/0 cards (e.g. sound cards or 1/0 cards), you must adjust one of the 1/0 addresses to avoid address conflict. (You can adjust these 1/0 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, or an external battery, via connectors on the mainboard. Refer to Figure 1-1 for connector locations and connector pin positions.

J1 - PS/2 Mouse Connector

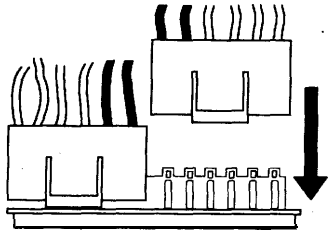
Attach PS/2 mouse cable to this connector.

J3 - Keyboard Connector

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

J4 - 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

JI 9- Hardware Reset Control'

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

J20 - External Battery Connector

J20 is a 4-pin connector to which you can attach an external battery. Pin 1 of J20 is positive (+) and pin 4 is negative (-).

J22 - Turbo LED Connector

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

IDE1/IDE2 - On-board Primary/Secondary IDE HDD Connectors

Attach on-board hard disk drives to these connectors.

LED1/LED2 - HDD LED Connectors

Attach on-board hard disk drive LEDs to this connector. The LED lights when an HDD is active.

COM1/COM2 Connectors

Attach COM1/COM2 cable to these connectors.

FDC Connector

Attach floppy cable to this connector.

PRTI Connector

Attach parallel port cable to this connector.

VGA Connector (Optional)

Attach VGA cable to this connector.

VGA Feature Connector (Optional)

Attach VGA Feature cable to this connector.

AUDIO Connector

Attach AUDIO adapter to this connector.

JP52 - Wave Table Connector

Attach the cable of Wave Table card to this connector.

Audio Adapter Function

Plug in this Audio Adapter to the motherboard for connecting the external device, such as wave table card, speaker, microphone, and joystick. Function of every connector is described below.

WTCI - Wave Table Card Connector

Attach wave table card to this connector for enable the wave table function.

SBI - Audio Adapter Connector

Attach this end to the audio connector of the motherboard for connection.

JI - CD-ROM Audio In Connector

Attach CD-ROM Audio line to this connector for transferring CD-ROM ' s audio to the speakers.

JACKI - Speaker Out Jack

Attach the cable of the speakers ' to this jack for enable the speakers.

JACK2 - Line Out Jack

Attach line out cable to this jack.

JACK3 - Line In Jack

Attach line in cable to this jack.

JACK4 - MIC In Jack

Attach the cable of microphone to this jack,

DB15 - Game Port Connector

Attach to the device which could use game port.

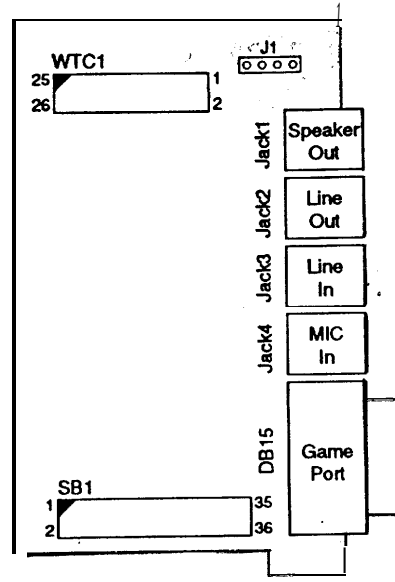


Figure 2-4-1. Top View of the Audio Adapter

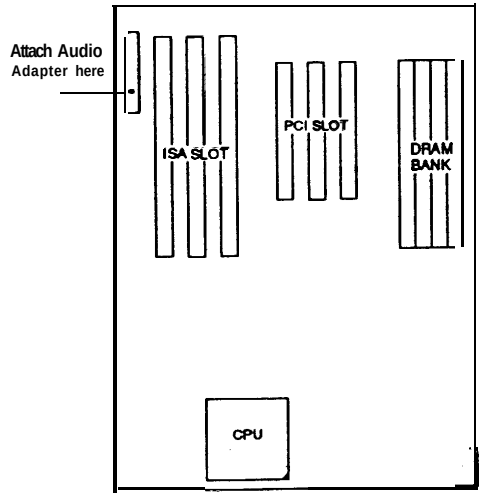


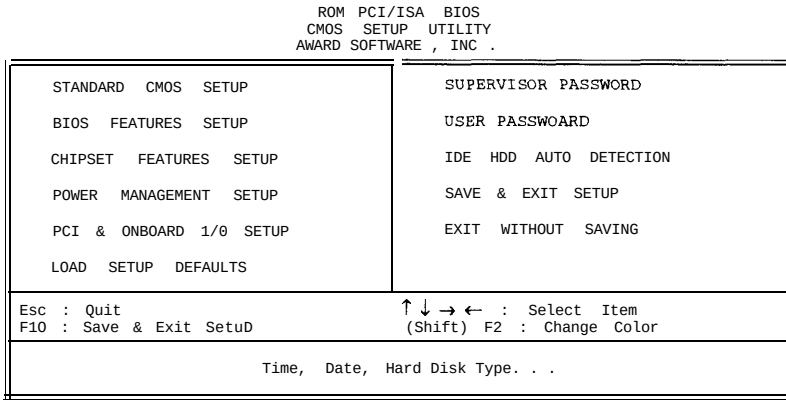
Figure 2-4-2. Audio Adapter Connection

3 BIOS Setup

The mainboard's BIOS setup program is the ROM PCI/ISA BIOS from Award Software ”Inc. Enter the Award BIOS program ’sMain 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:



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.

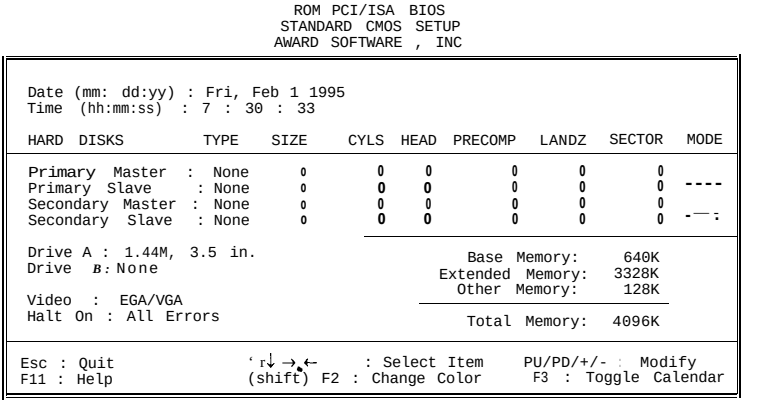
5. In the Main Menu, choose "SAVE AND EXIT SETUP" to save your changes and reboot the system. Choosing "EXIT WITHOUT SAVING" ignores your changes and exits the program.

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.



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

Date(mm/dd/yy) Type thecurrentdate.

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

Primary (Secondary) **Master & Slave** Choose fromthe standard harddisktypes 1 to 46 Type 47 is user definable ,If a hard disk is not installed choose "Not installed." (default)

Drive A & B Choose 360KB,51/4 in.,
1.2MB,51/4 in.,
720KB,31/2in.,
1.4M, 3 1/2 in. (default),
2.88MB, 3 1/2 in.,
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 PC I/ISA BIOS
                  BIOS FEATURES SETUP
                 AWARD SOFTWARE , INC .

CPU Internal Cache          : Enabled     Video BIOS Shadow   : Enabled
External Cache              : Enabled     C8000-CBFFF Shadow  : Disabled
Quick Power on Self Test    : Enabled     CCOOO-CFFFF Shadow  : Disabled
Boot Sequence                 A,C         DOOOO-D3FFF Shadow  : Disabled
Swap Floppy Drive           : Disabled    D4000-D7FFF Shadow  : Disabled
Boot Up NumLock Status      : On          D8000-DBFFF Shadow  : Disabled
Gate A20 Option             : Fast        DCOOO-DFFFF Shadow  : Disabled
Memory Parity Check         : Disabled
Typematic Rate Setting      : Disabled
Typematic Rate (Chars/See):   6
Typematic Delay (Msec)      : 250
Security Option               Setup
PCI/VGA Palette Snoop       : Disabled

                                        ESC : Quit        ↑ ↓ → ←: Select Item
                                        F1  : Help        PU/PQ/+/- : Modify
                                        F5  : Old Values  (Shift)F2 : Color
                                        F6  : Load BIOS Defaults
                                        F7  : Load Setup Defaults
```

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

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

Shift<F2>: Change color. .

<F5>: Get the old values. These values are the values with which the userstartedthe 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 CPUS 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.
Gate A20 Option	Choose Fast (default) o Normal. Fast allows RAM accesses above lMB using the fast gate A20 line.
Memory Parity Check	Choose Enabled or Disabled (default). This item enables/disables the Memory Parity check option. Do not enable this setting if SIMM modules are without parity RAM.
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.

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

PCI/VGA Palette Snoop

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

Disabled: Default setting.

Video 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.

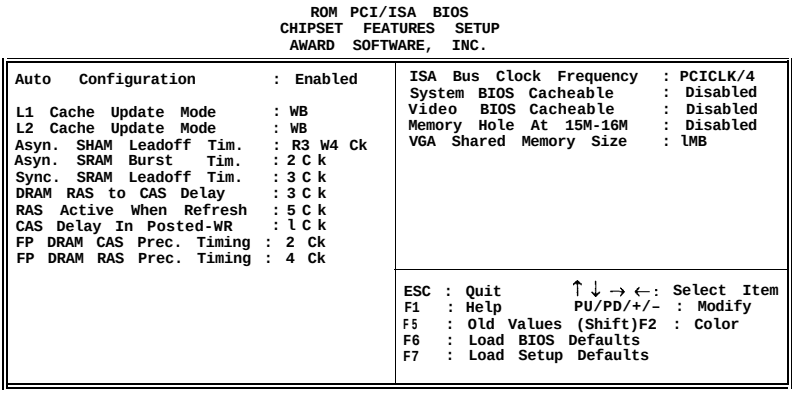
Chipset Features Setup

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.)



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 iterns 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 options is Enabled. you must boot from Turbo mode.

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

Asyn. SRAM Lead off Timing Use the default setting.

Asyn. SRAM Burst Timing Use the default setting.

Sync. SRAM Lead off Timing Use the default setting.

DRAM RAS to CAS Delay Use the default setting.

RAS Active When Refresh Use the default setting.

CAS Delay In Posted-WR Use the default setting.

FP DRAM CAS Precharge Time Use the default setting.

FP DRAM RAS Precharge Time Use the default setting.

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).

System BIOS Cacheable

Disabled: The ROM area FOOOOH-FFFFFH is not cached.

Enabled: The ROM area FOOOOH-FFFFFH is cacheable if cache controller is enabled.

Video BIOS Cacheable

Disabled: The video BIOS COOOOH-C7FFFH is not cached.

Enabled: The video BIOS COOOOH-C7FFFH 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.

VGA Shared Memory Size Choose lMB(default) or 2MB.
Choice of this option depends on your VGA resolution (see page 2).

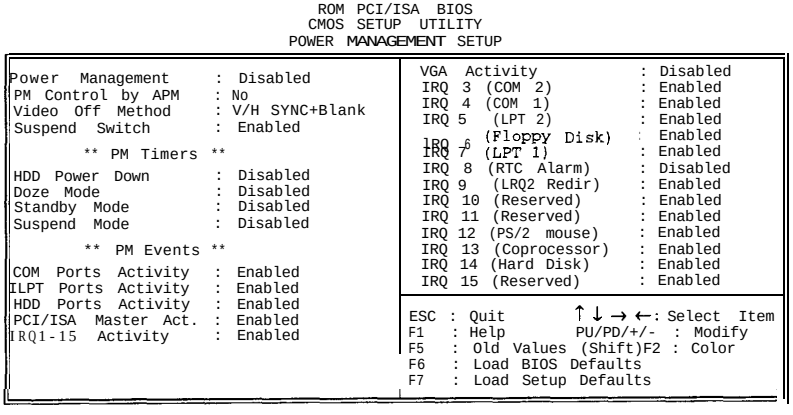
3. After YOU have finished with the Chipset Features Setup, press the <ESC> key and follow the screen instructions to save or disregard your settings.

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.



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

A short description of selected screen items follows:

Power Management Options are as follows:

- **User Define** Let ' you define the HDD and system powerdowntimes.
- **Disabled** Disables the Green PC Features.
- **Min Saving** Doze timer= 40Min.
  Standbytimer= 40Min.
  Suspendtimer=40 Min.
  HDDPowerDown =15Min
- **Max Saving** Doze timer =20 Sec.
  Standbytimer= 20Sec.
  Suspend timer =20 Sec.
  HDDPowerDown =lMin

PM Control by APM Choose Yes or No (default). APM stands for Advanced Power Management .TouseAPMyoumust run "power.exe" under DOS v6.00r laterversion.

Video Off Method Choose V/H Sync+ Blank (default), Blank screen, or DPMS for the selected PM mode.

Suspend Switch Choose Enabled (default) or Disabled. This option enables or disables JP33 (refer to page 5)

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 33 MHz). 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 Suspend mode, the CPU stops completely (no instructions are executed,)
xxx Ports Activity	The hardware monitors these ports for activity, If activity occurs from the Enabled item the system will not enter Green mode (power saving).
PCI/ISA Master Activity	The hardware monitors the master signals for activity. If activity occurs from the Enabled item, the system will not enter Green mode (power saving.)
IRQx VGA Activity	The BIOS monitors these items for activity, If activity occurs from the Enabled item the system will not enter Green mode (power saving).

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 & ONBOARD 1/0 SETUP
                 AWARD SOFTWARE, INC.

PnP BIOS Auto Config          : Disabled
1st Available IRQ*            : 9*
2nd Available IRQ*            : 10*
3rd Available IRQ*            : 11*
4th Available IRQ*            : 12*

PCI IRQ Activated By          : Level
PCI IDE 2nd Channel           : Enabled
PCI IDE IRQ Map To            : PCI-AUTO
 Primary IDE INT#             :A
 Secondary IDE INT#           :B

Internal PCI/IDE                Both
IDE Primary Master PIO        : Auto
IDE Primary Slave PIO         : Auto
IDE Secondary Master PIO      : Auto
IDE Secondary Slave PIO       : Auto
IDE HDD Block Mode            : Enabled

Onboard FDC Controller        : Enabled
Onboard Serial Port 1         : COM1/3F8
Onboard Serial Port 2         : COM2/2F8
Onboard Parallel Port         : 378H/IRQ7
Parallel Port Mode            : ECP/EPP
ECP Mode Use DMA              :3
Serial Portl MIDI             : Disabled
Serial Port2 MIDI             : Disabled

ESC : Quit          ↑ ↓ → ←: Select Item
F1  : Help          Pu/PD/+/- : Modify
F5  : Old Values (Shift)P2 :Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults
```

*: These items will disappear when PnP BIOS Auto Config. is enabled.

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:

PnP BIOS Auto Config. Disabled: BIOS doesn't' manage ISA PnP card (i.e. IRQ) but PCI card.

Enabled: BIOS auto manage PCI and ISA PnP card,

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 2nd Channel Choose Enabled (default) or Disabled. When Enabled is set, IRQ15 is dedicated for secondary IDE use. When Disabled is set, IRQ15 is released for other devices.

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#.

Internal PCI/IDE

Choose Both (default), Primary, Secondary, or Disabled.

Both: Turns on the Primary and Secondary IDE function.

Primary Turns on the Primary IDE function.

Secondary Turns on the **Secondary** IDE function.

Disabled Turns off the Primary and **Secondary** IDE 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 O 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 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,

Onboard FDC Control

Enabled: Use the on-board floppy controller (default).

Disabled: Turn off the on-board floppy controller.

Onboard Serial Port 1 **Onboard Serial port 2**	Choose serial port 1 & 2's I/0 address. Do no set port 1 & 2 to the same value except for Disabled. COM l/3F8H I COM3/3E8H COM 2/2F8H I COM4/2E8H (default) I
onboard parallel port	Choose the printer 1/0 address: 378H/IRQ7 (default), 278H/IRQ5, 3BCH/IRQ7
Parallel Port Mode	Choose normal, EPP/SPP, or EPP/ECP (default) mode. The mode choice depends on the external device that is connected to the port.
ECP Mode Use DMA:	Choose 3 (default) or 1. This option is available only when ECP mode and Parallel port 378H/278H are selected.
Serial **Port** 1/2 **MIDI**	Choose Enabled or Disabled to enable or disable the MIDI function from the serial port.

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,

Supervisor Password

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. depending on the setting you made in the "Security Option "of the "BIOS Features Setup" Change the password as follows:

1. Choose "Supervisor Password" 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.

User Password

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, depending on the setting you made in the "Security Optio n"of th e "BIOS Features Setup" Change the password as follows:

1. Choose "User Password" " 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.

5. User Password's right does'n allow you to change any setting in the "CMOS Setup Utility"except the 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.*