

Pentium

**82430 VX/P54C PCI Mainboard
User's Guide &
Technical Reference
*5VX0/X2/X5***

**SOYO**TM

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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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5VX0/X2/X5 SERIAL

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1 Introduction

The 82430 VX PCI mainboard is a high-performance **multimedia and ATX form-factor** system board that supports P54CX/P55CX family CPUs. You can order 256K or 512K of external cache memory on the mainboard. The mainboard is fully compatible with industry standards, and adds many technical enhancements.

Key Features

- CPU
 - Supports P54C/P55C family CPUs running at 75 ~ 200 MHz speeds; Cyrix 6x86/6x86L CPUs running at P120+/P133+/P150+/P166+ MHz speeds; and AMD K5 CPUs.
 - Supports SOCKET 7 for upgrade
 - Supports P54CX/P55CX SMM Mode and CPU Stop Clock
- L2 Cache Controller
 - Write Back Cache Modes and Direct Mapped Organization
 - On-board 256K/512K Pipeline Burst SRAMs Cache
- DRAM Controller
 - Supports Fast-Page Mode, and EDO DRAM (both symmetrical and asymmetrical addressing)
 - **Supports 2 strips of 8MB/16MB/32MB Unbuffered DIMMs**
 - On-board memory configurations from **4 to 128 Mbytes**
 - Supports “**Table-Free**” DRAM configuration in any SIMM bank
- BUS Controller
 - Compliant to PCI specifications v2.1
 - Three 32-bit PCI slots (Masters) and Four ISA slots, 4-layer PCB
 - **Supports Universal Serial Bus — USB (Optional)**
- Peripheral Controller
 - System BIOS built-in NCR306 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), one ECP/EPP/SPP compatible parallel port, and one PS/2 mouse port
 - **On-board supports FLASH Memory for easy upgrade BIOS**
 - **Easy installation of Triones EIDE/ATAPI CD-ROM Bus Master Drivers**
- **Onboard creative CT-2505 sound chip and audio phone jacks**

Unpacking the Mainboard

The mainboard package contains:

- The 82430VX Mainboard
- This User's Guide
- One IDE Bus Master driver

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

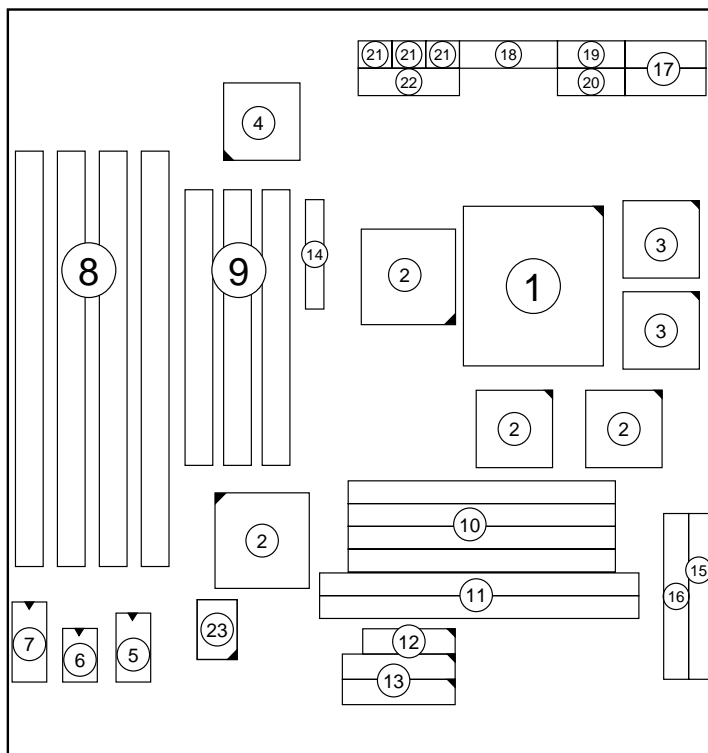


Figure 1–1. Mainboard Layout

- | | |
|--------------------------|-----------------------------------|
| 1. P54C in ZIF socket 7 | 13. IDE1/IDE2 Connector |
| 2. 82430 VX Chipset | 14. Wave Table Connector |
| 3. Pipelined Burst SRAM | 15. AT Power Connector (Reserved) |
| 4. Creative CT2505 chip | 16. ATX Connector |
| 5. PnP FLASH BIOS | 17. COM1/COM2 Connector |
| 6. Real Time Clock (RTC) | 18. Parallel Port Connector |
| 7. Keyboard BIOS | 19. PS/2 KB Connector |
| 8. ISA Slots | 20. PS/2 Mouse Connector |
| 9. PCI Slots | 21. Audio Jack |
| 10. SIMM Bank | 22. Game Port |
| 11. Unbuffered DIMM Bank | 23. Super I/O chip |
| 12. Floppy Connector | |

Default settings are as follows: Pentium 100MHz CPU, 256K Pipelined Burst cache, On-board PCI E-IDE Enabled, 2 high speed UARTS Enabled (w/ 16550 FIFO), 1 EPP/ECP port (ECP + EPP mode), and 5V DRAM/3.3V DIMM.

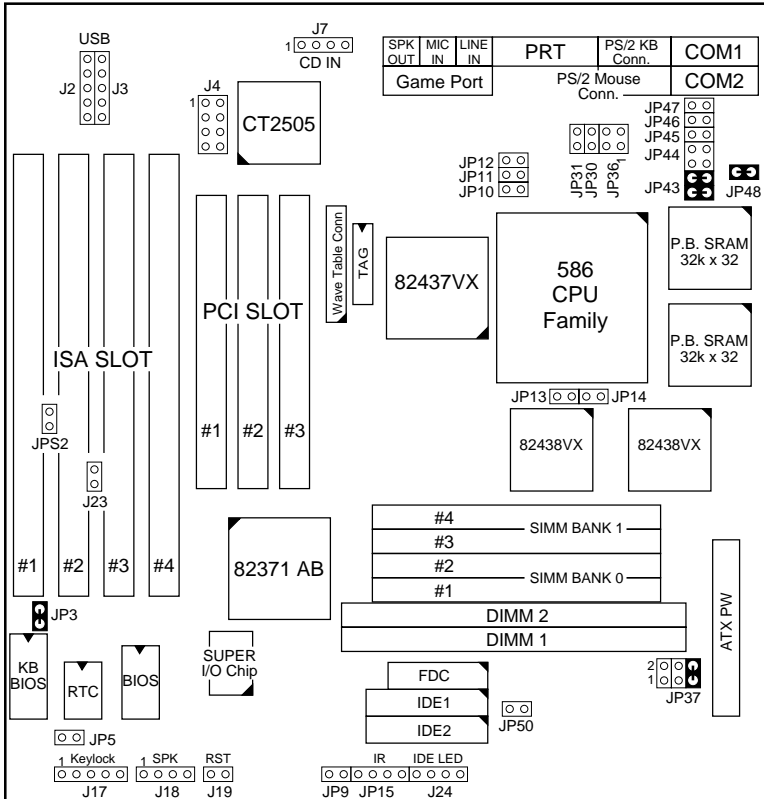


Figure 1–2. Mainboard Default Setting

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



JP3: Display Type

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

Monitor Type	JP3
Monochrome	
EGA/VGA (default)	

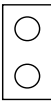

JP5: CMOS Clear Jumper

Clear the CMOS memory by momentarily shorting this jumper; then open the jumper to retain new settings.

CMOS Setting	JP5
Retain CMOS data (default)	
Clear CMOS data	

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 the PS/2 mouse when choosing enabled of PS/2 Mouse Function.

CPU Type Configuration

This section shows you how to configure your CPU step by step. Note that you need to check the CPU voltage before installation.

□ Step 1: Frequency Setting

Pentium – 75/90/100 CPU Settings (1.5 x clock)

AMD K5 – PR75/PR90/PR100/PR120/PR133 (1.5 x clock)

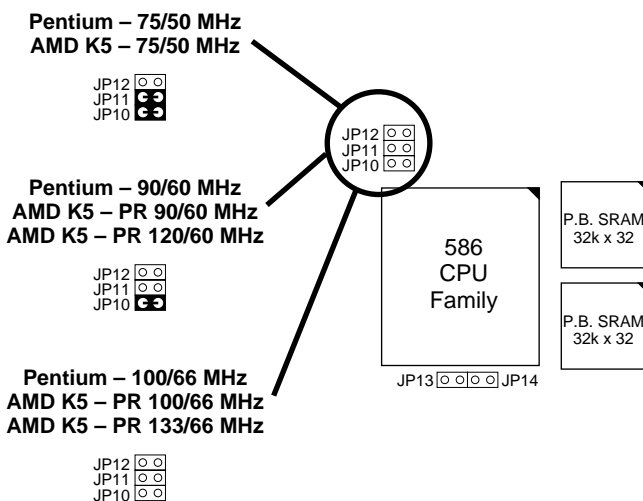


Figure 2–1–1. CPU Jumper Settings

Note: 1. You must equip the CPU with a fan and heat sink for system stability.

2. AMD K5–PR75/90/100 = AMD 5_k86(SSA5)–P75/90/100.

Pentium – 100/120/133 CPU Settings (2.0 x clock)**Cyrix 6x86/6x86L – P120+/P133+/P150+/P166+ CPU Settings
(2.0 x clock)**

Pentium – 100/50 MHz
Cyrix 6x86/6x86L – P120+/50 MHz



Cyrix 6x86/6x86L – P133+/55 MHz



Pentium – 120/60 MHz
Cyrix 6x86/6x86L – P150+/60 MHz



Pentium – 133/66 MHz
Cyrix 6x86/6x86L – P166+/66 MHz

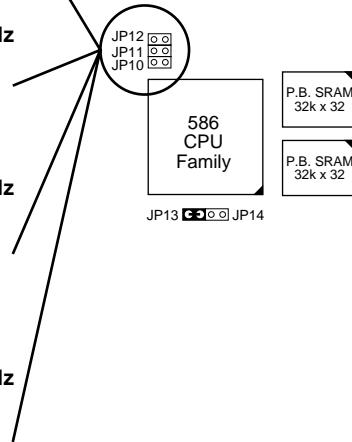


Figure 2–1–2. CPU Jumper Settings

Note: 1. You must equip the CPU with a fan and heat sink for system stability.




2. Cyrix 6x86 – P166⁺ has to be matched with 60ns DRAMs.

Pentium/AMD – 150/166 CPU Settings (2.5 x clock)

Pentium – 150/60 MHz
AMD K5 – PR150

JP12 
 JP11 
 JP10 

Pentium – 166/66 MHz
AMD K5 – PR166

JP12 
 JP11 
 JP10 

JP12 
 JP11 
 JP10 

586
CPU
Family

P.B. SRAM
32k x 32

P.B. SRAM
32k x 32

JP13  JP14

Figure 2–1–3. CPU Jumper Settings

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

Pentium – 180/200 CPU Settings (3.0 x clock)

Pentium – 180/60 MHz

JP12 
 JP11 
 JP10 

JP12 
 JP11 
 JP10 

586
CPU
Family

P.B. SRAM
32k x 32

P.B. SRAM
32k x 32

JP13  JP14

Pentium – 200/66 MHz

JP12 
 JP11 
 JP10 

Figure 2–1–4. CPU Jumper Settings

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

❑ Step 2: CPU Single/Dual Voltage Setting

Single Voltage CPU Setting

Signal voltage CPUs use the same voltage for VIO and VCore and has been used traditionally. The CPUs which fall into this category are Intel P54CX, AMD-K5-PRxxxBx, AMD-K5-PRxxxCx, AMD-K5-PRxxxFx, and Cyrix 6x86. Refer to the following figures to set these CPUs' voltage:

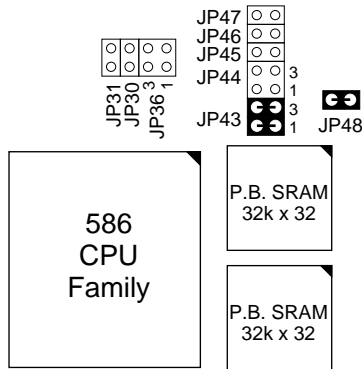


Figure 2-2-1. Single Voltage 3.3V CPU

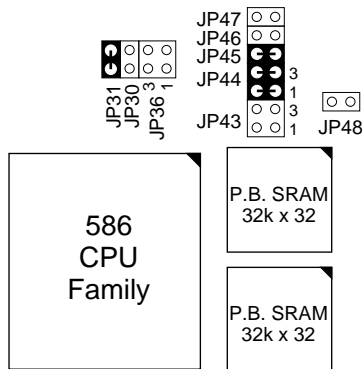


Figure 2-2-2. Single Voltage 3.52V CPU

Dual Voltage CPU Setting

Dual voltage CPUs are designed to use different voltage for VIO and VCore and they include Intel P55CX, AMD-K5-PRxxxHx, AMD-K5-PRxxxJx, AMD-K5-PRxxxKx, AMD K6, Cyrix 6x86L, and Cyrix M2. Refer to the following figures to set these CPUs' voltage:

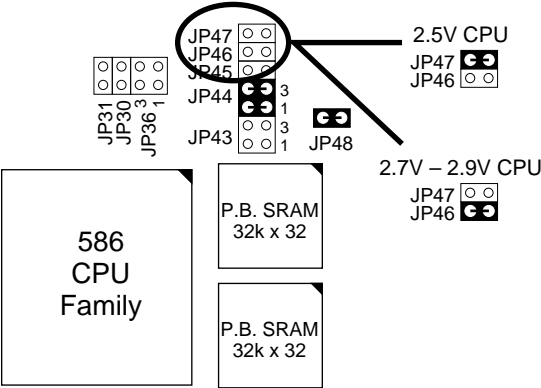


Figure 2-2-3. Intel P55CX, AMD K5/K6, CYRIX 6X86 L/M2 Dual Voltage CPU

Memory Configuration

The mainboard supports two banks of **72-pin SIMM, EDO DRAM, and two strips of 3.3V/5V Unbuffered DIMM**. The mainboard requires SIMM of at least 70ns access time.

The mainboard supports **from 4 to 128 Mbytes** with no other restrictions on memory configurations. You can install SIMM in any combination without having to rely on a memory configuration table. Memory configuration is thus **“Table-Free”** in any SIMM bank. You must install two strips of SIMM modules to complete a bank.

RAM Bank Installation Notice

Due to the RAS line share architecture of VX chipset, the possible combination of DIMM/SIMM in this mainboard are as one of the followings:

- 1. In Bank 0, Bank 1, or Bank 0 & Bank 1
- 2. In DIMM 1, DIMM 2, or DIMM 1 & DIMM 2
- 3, In Bank 0 & DIMM 2
- 4. In Bank 1 & DIMM 1

DIMM Voltage Setting

You must check the voltage of your DIMM before you install it. See Jumper 37 to configure the proper voltage for DIMM.

Type of DIMM	JP37
3.3V Fast-Page Mode, EDO, and SDRAM (default)	<div><div>1</div><div>3</div><div>5</div><div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div></div>
5V Fast-Page Mode and EDO	<div><div>1</div><div>3</div><div>5</div><div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div></div>

Cache Configuration

The mainboard has a write-back caching scheme. You can order 256KB or 512KB Level 2 Pipelined Burst cache onboard to improve the system performance.

Cache Size and RAM Locations

Cache Size	Cache RAM	TAG RAM	Cacheable Range
256KB	32K x32, 2 pcs on U39, U40	16K x 8 on U25	64 MB
512KB	64K x 32, 2pcs on U39, U40	16K x 8 on U25	128 MB

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.

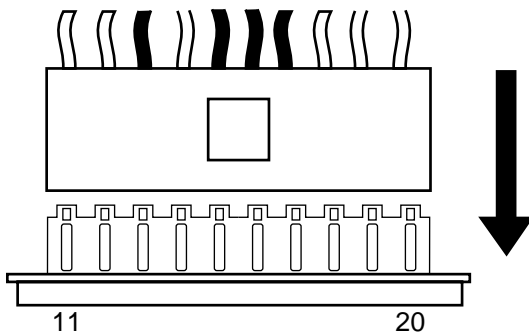
Note: Some sound cards have a default IRQ setting for IRQ7, which may conflict with printing functions. If this occurs do not use sound card functions at the same time you print.

Connectors

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

ATX PW — ATX Power Supply Connectors

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. **You can only use either AT or ATX power.**



JP9/JP50 – ATX Power Supply On/Off Switch Connectors

Due to that the ATX power supplies do not have an On/Off switch, attach this 2-pin switch from the PC case for turning on or off your power supply. There are two different types of On/Off switch connectors in this motherboard: latch type (JP9) and momentary type (JP50). Latch type is the traditional AT type of On/Off switch and momentary type is a non-latch (one-touch) type of On/Off switch. You need to choose one or the other type of these two switches depending on the PC case that you have. Notice that you have to unplug the ATX power supply connector before either installing or removing any add-on cards when you use the momentary type of the On/Off switch.

J28, J29 – COM1/COM2 Connectors

Attach COM1/COM2 device cable to these connectors.

J7 – CD In Connector

Connect a 4-pin audio cable, which is provided by the CD-ROM manufacture, from the Audio-out port of the CD-ROM drive to this connector, and also for transferring the audio signal from the CD-ROM to the speakers system, connect speakers system audio-in cable to speaker out jack of this mainboard.

J4 – Creative Wave Table Card Connector

This connector is reserved for Creative wave table ISA cards (i.e., AWE32 Upgrade CT-1920). You should be able to plug a Creative wave table card on ISA bus then connect the cable from the wave table card to this connector, and then connect the audio-in cable of the speakers system to the speaker-out jack of this mainboard.

FDC Connector

Attach floppy cable to this connector.

J11 – Game Port

Attach a 15-pin male header device, which meets the game port specifications (i.e., joystick), to this connector.

J19 – Hardware Reset Control

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

J24 – HDD LED Connectors

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

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

Attach on-board hard disk drives to these connectors.

JP15 – IR Connector

Attach a 4-pin infrared device cable to this connector for enabling the infrared transfer function. This mainboard meets the specification of ASKIAR and HPSIR.

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. (Pin 1, 3 for power LED and pin 4, 5 for keylock.)

J26, J27 – PS/2 Mouse, PS/2 Keyboard Connector

Attach PS/2 mouse and PS/2 keyboard cables directly to these connectors for enabling the mouse and keyboard functions. And also, you need to enable the PS/2 mouse function by putting the jumper cap on JPS2 jumper.

PRT – Parallel Port Connector

Attach parallel port cable to this connector.

J23: Sleep Switch Connector Enable/Disable

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

J12 ~ J14 – Speaker Out Jack, MIC In Jack, Line In Jack

J12: attach the cable of the speakers' to this jack to enable the speakers.

J13: attach the cable of microphone to this jack.

J14: attach line out cable from the audio device (i.e., stereo system) to this connector for transferring stereo signal to the Creative sound chip.

J18 – Speaker Connector

Attach the system speaker to connector J18.

J2, J3 – Universal Serial bus Connector (Optional)

Attach USB cable to these connectors for external USB device.

JP52 – Wave Table Connector

Attach Wave Table card or Wave Table daughter board to this connector.

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 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
PCI & ONBOARD I/O SETUP	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) : 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

Video : EGA/VGA
Halt On : All Errors

Base Memory: 640K
Extended Memory: 3328K
Other Memory: 128K

Total Memory: 4096K

Esc : Quit
F11 : Help

↑ ↓ → ← : Select Item
(Shift) F2 : Change Color

PU/PD/+/- : Modify
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)
Master & Slave

Choose from the standard hard disk types 1 to 46. Type 47 is user definable. If a hard disk is not installed choose “Not installed.” (default)
- 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
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 Shadow	: 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
Gate A20 Option	: Fast	DC000-DFFFF Shadow	: Disabled
Typeomatic Rate Setting	: Disabled		
Typeomatic Rate (Chars/Sec)	: 6	ESC : Quit	↑ ↓ → ← : Select Item
Typeomatic Delay (Msec)	: 250	F1 : Help	PU/PD/+/- : Modify
Security Option	: Setup	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:

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:, drive C, or CD-ROM. You can reverse this sequence with “C: A:”, but then drive A: cannot boot directly. (It depends on the specifications of CD-ROM or CD-ROM drivers to boot from CD-ROM.)
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) or Normal. Fast allows RAM accesses above 1MB using the fast gate A20 line.
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	<p>Choose Setup or System. Use this feature to prevent unauthorized system boot-up or use of BIOS Setup.</p> <p>“System” – Each time the system is booted the password prompt appears.</p> <p>“Setup” – If a password is set, the password prompt only appears if you attempt to enter the Setup program.</p>
PCI/VGA Palette Snoop	<p>Enabled: The color of the monitor may be incorrect if used with MPEG card. Enable this option to make the monitor normal.</p> <p>Disabled: Default setting.</p>

**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 or
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.	
Auto Configuration : Enabled	
DRAM Timing : 70 ns	
DRAM RAS# Precharge Time : 4	
DRAM R/W Leadoff Timing : 6	
Fast RAS# To CAS# Delay : 3	
DRAM Read Burst Timing : x333x444	
DRAM Write Burts Timing : x333	
Fast MA to RAS# Delay CLK: 1	
Fast EDO Path Select : Enabled	
Refresh RAS# Assertion : 5 CLKS	
ISA Bus CLock : PCICLK/4	
System BIOS Cacheable : Disabled	
Video BIOS Cacheable : Disabled	
8 Bit I/O Recovery Time : 1	ESC : Quit ↑ ↓ → ←: Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
16 Bit I/O Recovery Time : 1	
Memory Hole At 15M-16M : Disabled	
Peer Concurrency : Enabled	
Early NA Control : 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:

- 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.**
- DRAM Timing**

Choose the right speed to fit your DRAM’s spec.

DRAM RAS Precharge Time	Use the default setting.
DRAM R/W Leadoff Timing	Use the default setting.
DRAM RAS to CAS Delay	Use the default setting.
DRAM Read Burst Timing	Use the default setting.
DRAM Write Burst Timing	Use the default setting.
Fast MA to RAS# Delay CLK	Use the default setting.
Fast EDO Path Select	Use the default setting.
Refresh RAS# Assertion	Use the default setting.
ISA Bus Clock	Use BIOS default setting or choose: /4: for 60, 66MHz CPU Bus Frequency /3: for 50, 55MHz CPU Bus Frequency.
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.
8Bit I/O Recovery Time	Use the default setting.

16Bit I/O Recovery Time	Use the default setting.
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.
Peer Concurrency	Use the default setting.
Early NA Control	Use the default setting.

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	: Disabled	** Power Down & Resume Events **
PM Control by APM	: No	IRQ 3 (COM 2) : ON
Video Off Method	: V/H SYNC+Blank	IRQ 4 (COM 1) : ON
		IRQ 5 (LPT 2) : ON
Doze Mode	: Disabled	IRQ 6 (Floppy Disk) : OFF
Standby Mode	: Disabled	IRQ 7 (LPT 1) : ON
Suspend Mode	: Disabled	IRQ 8 (RTC Alarm) : OFF
HDD Power Down	: Disabled	IRQ 9 (IRQ2 Redir) : ON
		IRQ 10 (Reserved) : ON
		IRQ 11 (Reserved) : ON
** Wake Up Events In Doze & Standby **		IRQ 12 (PS/2 mouse) : ON
IRQ3 (Wake-Up Event) :	ON	IRQ 13 (Coprocessor) : ON
IRQ4 (Wake-Up Event) :	ON	IRQ 14 (Hard Disk) : ON
IRQ8 (Wake-Up Event) :	ON	IRQ 15 (Reserved) : ON
IRQ12 (Wake-Up Event) :	ON	
		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.

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 = 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 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 Method	Choose V/H Sync+Blank (default), Blank screen, or DPMS for the selected PM mode.
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.)
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.
IRQx (Wake-Up Events)	The BIOS monitors these items for activity. If activity occurs from the Enabled item the system wakes up.
Power Down Activities	The BIOS monitors these items for no activity. If no activity occurs from the Enabled item the system will enter power saving mode (Doze/Standby/Suspend/ HDD Power Down mode) .

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 Reset Configuration Data : Disabled	PCI IRQ Activated By : Level PCI IDE IRQ Map To : PCI-AUTO Primary IDE INT# : A Secondary IDE INT# : B
IRQ-3 assigned to : Legacy ISA* IRQ-4 assigned to : Legacy ISA* IRQ-5 assigned to : PCI/ISA PnP* IRQ-7 assigned to : Legacy ISA* 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 : Legacy ISA* IRQ-15 assigned to : Legacy ISA* DMA-0 assigned to : PCI/ISA PnP* DMA-1 assigned to : PCI/ISA PnP* DMA-3 assigned to : PCI/ISA PnP* DMA-5 assigned to : PCI/ISA PnP* DMA-6 assigned to : PCI/ISA PnP* DMA-7 assigned to : PCI/ISA PnP*	ESC : Quit ↑ ↓ → ← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults 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.

IRQX and DMAX assigned to	<p>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.</p> <p>PCI/ISA PnP: BIOS auto assigns IRQ/DMA to the device.</p> <p>Legacy ISA: User assigns IRQ/DMA to the device.</p>
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>.

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.	
IDE HDD Block Mode : Enabled PCI Slot IDE 2nd Channel : Enabled On-Chip Primary PCI IDE: Enabled On-Chip Secondary PCI IDE: Enabled IDE Primary Master PIO : Auto IDE Primary Slave PIO : Auto IDE Secondary Master PIO : Auto IDE Secondary Slave PIO : Auto USB Controller : Disabled Onboard FDD Controller : Enabled Onboard Serial Port 1 : 3F8/IRQ4 Onboard Serial Port 2 : 2F8/IRQ3 Infra Red (IR) Function : Disabled Onboard Parallel Port : 378H/IRQ7 Onboard Parallel MODE : ECP/EPP ECP Mode Use DMA : 3 IR Transfer Mode : Half-Dup	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:

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.
PCI Slot 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.
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 Primary Master PIO	Choose Auto (default) or mode 0~4.
IDE Primary Slave PIO	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 Secondary Master PIO	
IDE Secondary Slave PIO	
USB Controller	Enabled it when you use USB device.
Onboard FDC Controller	Enabled: Use the on-board floppy controller (default). Disabled: Turn off the on-board floppy controller.
Onboard Serial Port 1	Choose serial port 1 & 2's I/O address.
Onboard Serial Port 2	Do no set port 1 & 2 to the same value except for Disabled.
	COM 1/3F8H COM3/3E8H
	COM 2/2F8H COM4/2E8H
	(default)

Infra Red (IR) Function	Disabled: Disabled the IR function.
	HKSIR: Use UART in HKSIR mode when your IR equipment meets this specification.
	ASKIR: Use UART in ASKIR mode when your IR equipment meets this specification.
Onboard Parallel Port	Choose the printer I/O address: 378H/IRQ7 (default), 3BCH/IRQ7, 278H/IRQ5
Onboard Printer Mode	Choose ECP + EPP (default), SPP or EPP, ECP mode. The mode depends on your external device that connects to this port.
ECP Mode DMA Select	Choose DMA3 (default) or DMA1. This setting only works when the Onboard Printer Mode is set at the ECP mode.
IR Transfer Mode	Half-Dup: Use IR function in half-duplex mode.
	Full-Dup: Use IR function in full-duplex mode.

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:

“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. You have the right to change any changeable settings in the “CMOS SETUP UTILITY.”

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:

“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. 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