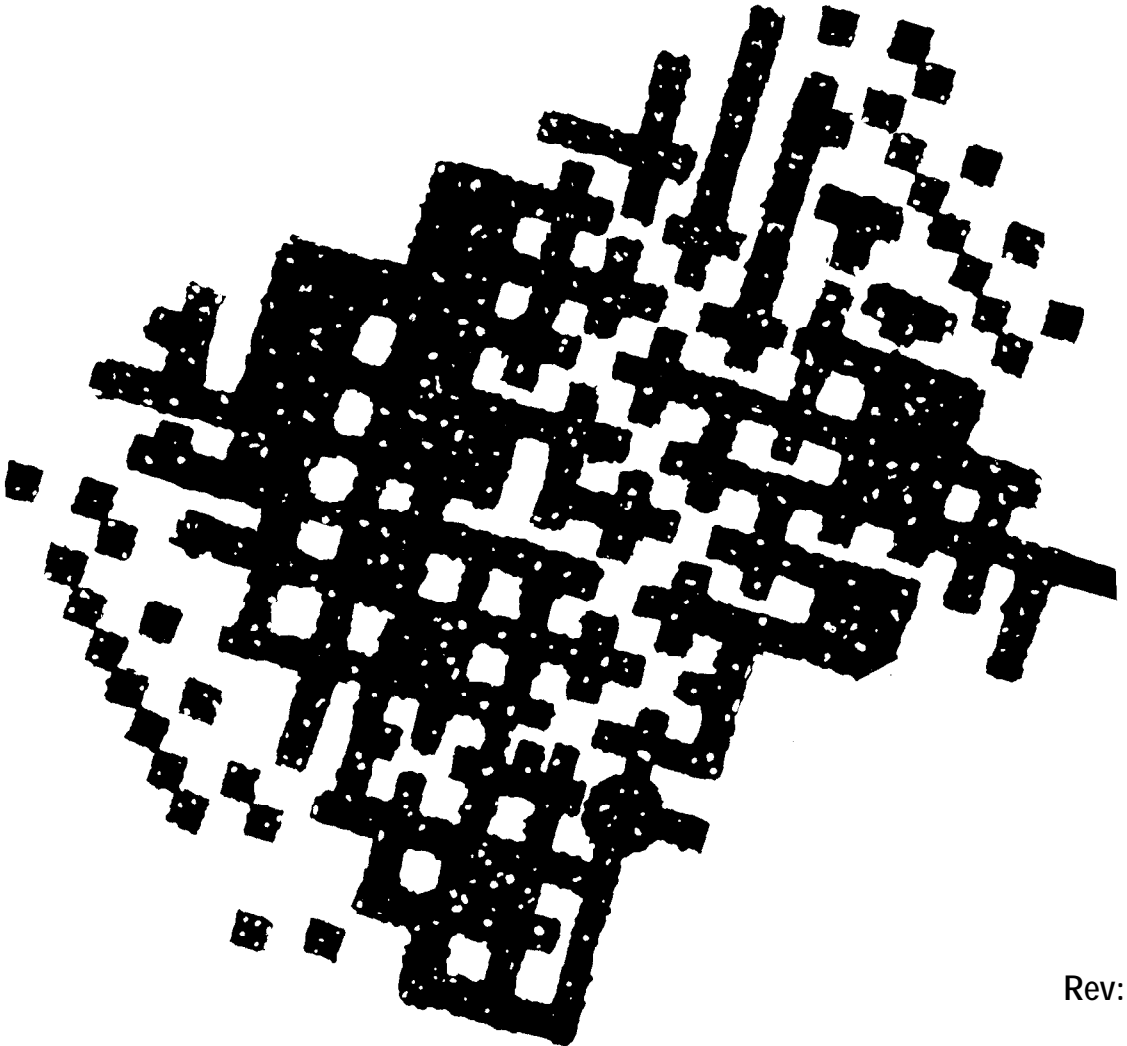


USER'S MANUAL

AH4/AH4T MAIN BOARD



Rev: 1.21

Important Notice

1. Define the model number

This manual is suitable for **two** model : **AH4T** and **AH4**. The model AH4 is a low cost solution of **AH4T** by removing the DX4 supported. **Install DX4 CPU on AH4 system board may cause the CPU burned-out.**

2. Installing Intel's DX4 CPU(for AH4T only)

Since the Intel's DX4 CPU consumes **3.3V** in processing, the use of **5V** could cause it **burned-out**. **When** the DX4 CPU is installed on thii motherboard, care must be exercised to make sure that the jumper settings are correct. Please refer the following tables for **DX4's** correct jumper settings:

<u>Jumper No.</u>	<u>No. of Pins</u>	<u>Description</u>	Jumper setting
JP48	3	Select DX4 CPU	1-2
		Select other CPU	2-3
JP50	3	Select DX4 CPU	1-2
		Select other CPU	2-3

The jumper setting of Clock Generator for DX4 please check page 2-11.

High Performance Cache 486 VESA Mainboard

USER'S MANUAL

Table of Contents

Chapter 1 System Board Overview

- 1.1 The mainboard specifications 1-1
- 1.2** The system block diagram 1-2
- 1.3 Placement..... 1-3
- 1.4 Quick reference for installation1-4

Chapter 2 Hardware Setup

- 2.1** Power Precautions..... 2-1
- 2.2 Connectors2-1
- 2.3 Jumper Switches 2-4
- 2.4 Installation of CPU 2-7
- 2.5 Installation of DRAMs..... 2-8
- 2.6 Installation of Cache memory2-10
- 2.7 Jumper setting of Clock Generator for CPU
frequency selection2-11

Chapter 3 Award BIOS Setup

- 3.1 Standard CMOS Setup Menu 3-3
- 3.2 BIOS Feature Setup Menu 3-5
- 3.3 Chipset Feature Setup Menu 3-8
- 3.4 Power Management Setup..... 3-9

Table of Contents

3.5 Load BIOS Default	3-13
3.6 Load Setup Defaults	3-13
3.7 Password Setting.....	3-14
3.8 IDE HDD Auto Detection.....	3-14
3.9 Standard type of hard disk	3-15

Chapter 1

System Board Overview.

1.1 The mainboard specifications

1. CPU: **80486 DX/DX2/SX/SL, DX4*(P24C)**
2. Cache memories: Primary: Built-in **8KB** in 80486
Secondary: Standard 256KB
Optional: **128/512 KB**
3. I/O slots : Three 32-bit **VESA** slots , seven 16-bit and one **8-bit** slots for AT compatible add-on cards.
4. Memories : 128MB max on board
Using **4-72pin** SIMM modules.
Support very flexible memory configurations.
5. BIOS: Award or AM1 BIOS.
6. VL-Bus functions: Provides two VL-Bus masters or three slaves.
7. Green PC function: Stop CPU CLOCK.
Provides connector to turn off monitor AC power, and VGA card HSYNC, VSYNC.
Monitor 2-serial port, one parallel port, KBD/mouse, HDD activity.

* Note: **DX4*** is **AH4T** model only.

1.3 Placement

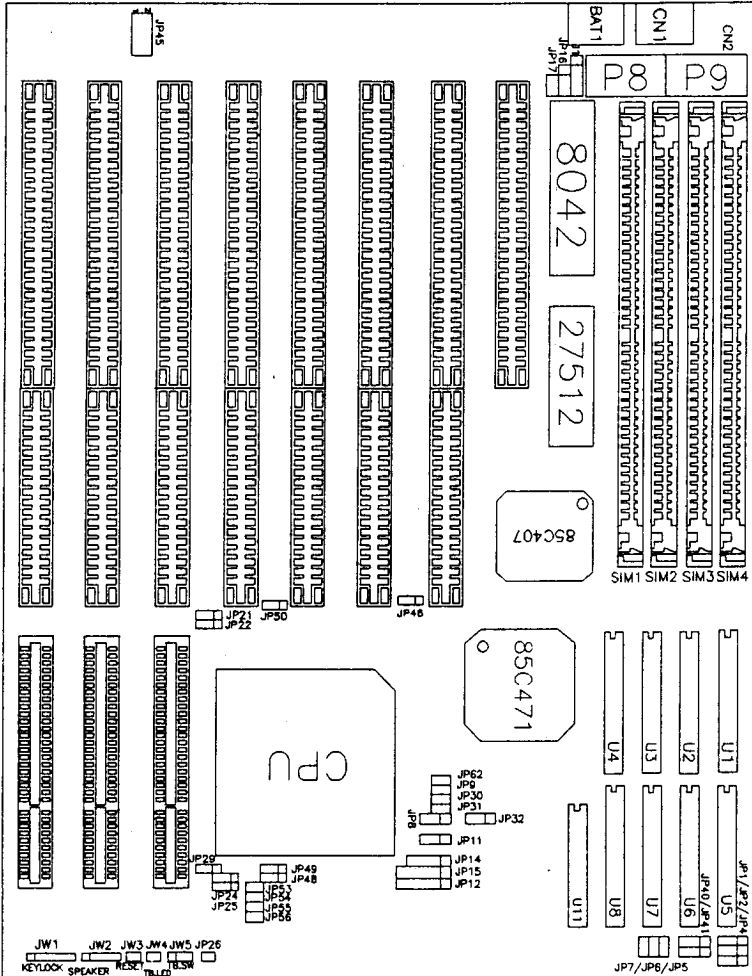


Figure 1-1

1.4 Quick reference for installation

- Step 1. Please verify the following jumpers:
- A. JP16 : A jumper at pin “1-2” for CMOS RAM normal operation.
 - B. **JP5-JP9, JP11**, JP12, JP14, JP15, JP21, JP22, JP24, **JP25, JP32**, JP46, **JP48-JP50, JP53-JP56**, JP62 : Make sure the jumper setting is consistent with the installed CPU.
(refer section 2.4 and 2.7)
- Step 2. Connect **CN1** to the keyboard.
- Step 3. Plug at least 1 **DRAM** modules into the SIMM sockets **SIM1(BANK0)**.
- Step 4. Verify the cache size selection jumpers **JP1**, JP2, JP4, **JP40**, JP41 (refer section 2.6).
- Step 5. Connect the following connectors to your case :
- A. JW3 to I-I/W reset button.
 - B. JW2 to speaker.
 - C. **JW5** to turbo switch.
 - D. JW4 to turbo LED, the LED **will light up**.
 - E. **JW1** to **keylock**.
- Step 6. Plug in the display card and **HDD/FDD** driver card into slots.
- Step 7. Connect CN2 to **P8** and P9 of power supply.
- Step 8. Power on.
- Step 9. Enter the “Setup Menu” screen. Select the display type and driver type.
- Step 10. Quit the “Setup Menu” screen and then select “**SAVE & EXIT SETUP**” from BIOS Main Menu.
- Step 11. The system **will** re-boot.

Step 12. If you can see the DOS prompt **shown** on the screen, the installation is completed O.K.

Note : If you have any problem during the installation, please refer to chapter 2.2 for the detailed description.

Chapter 2

Hardware Setup

This chapter describes the mainboard's connectors and how to set the mainboard's jumpers.

2.1 Power Precautions

You Should take the following precautions before you begin working with the mainboard and its components:

- Turn off the mainboard's power, and unplug the power cord.
- Unplug all cables that connect the mainboard to any external devices.

2.2 Connectors

You attach system components and case devices to the mainboard's connectors. A description of each connector and its pin assignments follows. Refer to Figure I-1 for connector locations on the mainboard.

<p>Caution: <i>Make sure you first turn off all power to the system before attaching components to the mainboard.</i></p>

Hardware Setup

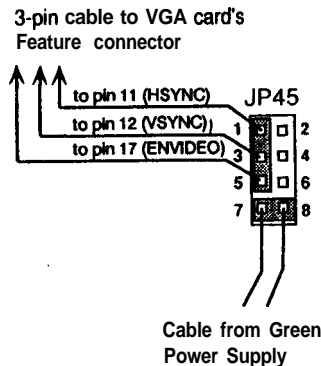
Connector Name	Pin Assignments	Description
External Battery Connector: J1 (4 Pins)	Pin 1: 6V battery input Pin 2: N.C. Pin 3: Ground. Pin 4: Ground.	In case the on-board battery is out of work, the user can remove it from the mainboard and connect a 6V external battery to the 4 pin J1
Turbo Connector: W5 (3 Pins)	Pin 1: +5VDC . Pin 2: Turbo signal. Pin 3: Ground.	1-2: Low speed mode. 2-3: Turbo mode. Connect the pin2 , pin3 to the cable of the chassis' turbo button.
Turbo LED Connector W4 (2 Pins)	Pin 1: Cathode terminal of LED. Pin 2: Anode terminal of LED.	If the connection is correct, the turbo LED will light up when the system is in turbo speed mode. Otherwise the turbo LED will be off.
Hardware Reset Connector: W3 (2 Pins)	Pin 1: Reset input Pin 2: Ground	Connect this switch to the cable of the chassis' reset button. Press and hold the reset button for at least one second to reset the system.
Keylock and Power LED Connector: W1 (5 Pins)	Pin 1: +5VDC . Pin 2: No connection. Pin 3: Ground. Pin 4: Keyboard inhibit Signal. Pin 5: Ground.	Connect this switch to the cable of the chassis' keylock button.
Speaker connector: W2 (4 Pins)	Pin 1: Sound signal. Pin 2: Ground. Pin 3: Ground. Pin 4: +5VDC .	Connect to the speaker connector in the front panel of the chassis.
Keyboard connector: CNI(5 Pins)	Pin 1: Keyboard clock. Pin 2: Keyboard data. Pin 3: No connection. Pin 4: Ground. Pin 5: +5VDC .	Connect to the Keyboard connector.

Connector Name	Pin Assignments	Function
Power input connector: CN2 (12 Pins)	Pin 1: Powergood. Pin 2: +5V. Pin 3: +12V . Pin 4: -12V. Pin 5: Ground Pin 6: Ground Pin 7: Ground Pin 8: Ground Pin 9: -5V Pin10: +5V Pin11: +5V Pin12: +5V.	Connect to the power connector from the power supply. Usually, the color marking of the power connector cables will be as listed above . Connect the power connector to the exact position. Any mis-take will cause the mainboard power supply or add-on card to be damaged.

JP45 - Green Video Connector

Connector **JP45** can provide Green PC control of a monitor's AC power and a VGA card's HSYNC and VSYNC. Attach a cable from the VGA card's feature connector to pin's **1, 3, and 5**, and attach a Green power supply's cable to pin's **7 and 8** as shown below.

Note that pin numbers **1, 3, and 5** of **JP45** correspond to pin numbers **11 (HSYNC)**, **12 (VSYNC)**, and **17 (ENVIDEO)** of the VGA cards feature connector. Refer to your VGA manual for more information. Attach cables as below.

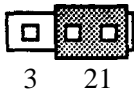


2.3 Jumper Switches

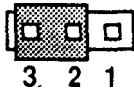
You set jumper switches on the mainboard to configure various hardware options. See Figure 1-1 for jumper locations.

Throughout this section the following symbols are used to indicate jumper settings.

For 3-pin jumpers, the symbols below are used:



Short Pins 1 and 2 with a jumper cap.



Short Pins 2 and 3 with a jumper cap.

For 2-pin jumpers, the following symbols are used:



Place the jumper cap over the two pins of the jumper to Short the jumper.

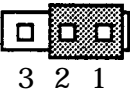
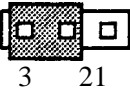


Remove the jumper cap to Open the jumper cap

Note: To avoid losing jumper caps, attach the removed jumper cap to one of the jumper pins.

JP16 - CMOS Discharge Jumper

Jumper JP16 discharges CMOS memory. When you install the **main-board**, make sure this jumper is set for Normal Operation (short pins 1-2). Set the jumper as below.

Setting	JP16
Normal Operation (Default)	
Discharge CMOS	

JP19, JP23, JP26, JP30, JP31, JP42 : Factory Reserved


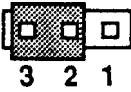
These jumpers are for the manufacturer's use only. Make sure these jumpers are set at their default settings as shown below.

Jumper No.	No. of Pins		Description	Default Setting
JP19	3		Factory reserved	1-2
JP23	3		Factory reserved	1-2
JP26	2		Factory reserved	OFF
JP30	2		Factory reserved	OFF
JP31	2		Factory reserved	OFF
JP42	2		Factory reserved	ON

JP29 - VL-Bus Jumper (VESA mode only)

Set jumper JP29 to configure the mainboard's VESA Local Bus. See Figure I-1 for jumper locations.

Set jumper JP29 to match the mainboard's CPU speed.

CPU Frequency	JP29
≤ 33 MHz (Default)	 3 2 1
> 33 MHz	 3 2 1

2.4 Installation of CPU

The mainboard is equipped with a 237 pin socket for various CPUs: 80486 SX/DX/DX2/486SL, M7, DX4 to be selected by following jumpers :

Jumper setting	JP8	JP9	JP11	JP12	JP14	JP15	JP21	JP22
486DX/DX2(SL)*	1-2	ON	2-3	3-4	2-3	4-5	2-3	1-2
486SX/SL	2-3	OFF	OFF	3-4	2-3	4-5	2-3	1-2
M7(5V)	1-2	ON	2-3	2-3	1-2, 3-4	2-3	1-2	2-3
Intel 486DX4**	1-2	ON	2-3	3-4	2-3	4-5	2-3	1-2
AMD 486DX4**	1-2	ON	2-3	3-4	2-3	4-5	2-3	1-2
AMD 486DX2** (3.45V)	1-2	ON	2-3	3-4	2-3	4-5	2-3	1-2
M7 DX2-Vxx* . (3.xxV)	1-2	ON	2-3	2-3	1-2, 3-4	2-3	1-2	2-3
Jumper setting	JP24	JP25	JP32	JP46	JP48	JP49	JP50	JP62
486DX/DX2(SL)*	OFF	OFF	1-2	2-3	2-3	OFF	2-3	OFF
486SX/SL	OFF	OFF	1-2	2-3	2-3	OFF	2-3	OFF
M7(5V)	2-3	2-3	1-2	1-2	2-3	OFF	2-3	OFF
Intel 486DX4* .	OFF	OFF	OFF	2-3	1-2	1-2	1-2	OFF
AMD 486DX4* .	OFF	OFF	1-2	2-3	1-2	1-2	1-2	OFF
AMD 486DX2** (3.45V)	OFF	OFF	1-2	2-3	1-2	OFF	1-2	ON
M7 DX2-Vxx* . (3.xxV)	2-3	2-3	1-2	1-2	1-2	OFF	1-2	OFF

Note: 486DX/DX2(SL)* is default setting.

** is for AH4T model only.

CPU Type	JP53	JP54	JP55	JP56	Note
DX4-75, Cx486DX2-V50	1-2	OFF	OFF	OFF	3.3V
DX4-100, AMD DX2/DX4	OFF	1-2	OFF	OFF	3.45V
Cx486DX2-V66	OFF	OFF	1-2	OFF	3.6V
Cx486DX2-V80	OFF	OFF	OFF	1-2	4.0V

2.5 Installation of DRAMs

The system board supports four banks of Memory **with/without parity bit of single side or double side 72 pin SIMM** for easy upgrade the system memory.

Note: (S) **Single side 72pin SIMM**
 (D) **Double side 72pin SIMM**

256K-S	= 256K x 32bits	= 1MBytes
1M-S	= 1M x 32bits	= 4MBytes
4M-S	= 4M x 32bits	= 16MBytes
16M-S	= 16M x 32bits	= 64MBytes
512K-D	= 2 x 256K x 32bits	= 2MBytes
2M-D	= 2 x 1M x 32bits	= 8MBytes
8M-D	= 2 x 4M x 32bits	= 32MBytes

The mainboard supports the following configurations:

SIM1 (Bank 0)	SIM2 (Bank 1)	SIM3 (Bank 2)	SIM4 (Bank 3)	TOTAL
256K-S	-----		-----	1MB
256K-S	256K-S			2MB
256K-S	256K-S	512K-D		4MB
256K-S	256K-S	1M-S		6MB
256K-S	256K-S	512K-D	1M-S	8MB
256K-S	256K-S	1M-S	1M-S	10MB
256K-S	256K-S	4M-S		18MB
512K-D	-----			2MB
512K-D	512K-D			4MB
512K-D	1M-S			6MB
512K-D	512K-D	1M-S		8MB
512K-D	512K-D	1M-S	1M-S	12MB
512K-D	512K-D	4M-S		20MB
512K-D	512K-D	1M-S	4M-S	24MB
512K-D	512K-D	4M-S	4M-S	36MB
1M-S	-----	-----	-----	4MB
1M-S	1M-S			8MB
1M-S	1M-S	1M-S		12MB
1M-S	1M-S	1M-S	1M-S	16MB
1M-S	4M-S	-----	--- ____	20MB

SIM1 (Bank 0)	SIM2 (Bank 1)	SIM3 (Bank 2)	SIM4 (Bank 3)	TOTAL
1M-S	1M-S	4M-S	-----	24MB
1M-S	4M-S	4M-S	-----	36MB
1M-S	1M-S	4M-S	4M-S	40MB
2M-D	-----	-----	-----	8MB
2M-D	2M-D	-----	-----	16MB
2M-D	2M-D	2M-D	-----	24MB
2M-D	2M-D	2M-D	2M-D	32MB
4M-D	-----	-----	-----	16MB
4M-D	4M-D	-----	-----	32MB
4M-D	4M-D	4M-D	-----	48MB
4M-D	4M-D	4M-D	4M-D	64MB
256K-S	1M-S	-----	-----	5MB
256K-S	4M-S	-----	-----	17MB
256K-S	16M-S	-----	-----	65MB
1M-S	16M-S	-----	-----	68MB
1M-S	1M-S	16M-S	-----	72MB
4M-S	16M-S	-----	-----	80MB
4M-S	4M-S	16M-S	-----	96MB
16M-S	-----	-----	-----	64MB
16M-S	16M-S	-----	-----	128MB
1M-S	8M-D	-----	-----	36MB
1M-S	8M-D	8M-D	-----	68MB
1M-S	1M-S	8M-D	-----	40MB
1M-S	1M-S	8M-D	8M-D	72MB
4M-S	8M-D	-----	-----	48MB
4M-S	8M-D	8M-D	-----	80MB
4M-S	4M-S	8M-D	-----	64MB
4M-S	4M-S	8M-D	8M-D	96MB
8M-D	-----	-----	-----	32MB
8M-D	8M-D	-----	-----	64MB
8M-D	8M-D	8M-D	-----	96MB
8M-D	8M-D	8M-D	8M-D	128MB

Hardware Setup

2.6 Installation of Cache memory

This mainboard supports very flexible Cache SRAM configuration: 128KB, 256KB, and 512KB.

Main Board Cache Size	128KB	256KB	512KB			
TAG SRAM	Location	U11				
	Type	8Kx8	32Kx8			
Data SRAM	Location	U1-U4	U1-U8	U1-U4	U1-U8	U1-U4
	Type	32Kx8		64Kx8		128Kx8
Jumper setting	JP1	1-2	2-3	1-2	2-3	1-2
	JP2	1-2	2-3	2-3	2-3	2-3
	JP4	1-2	1-2	1-2	2-3	2-3
	JP40	1-2	2-3	1-2	2-3	1-2
	JP41	1-2	2-3	1-2	2-3	1-2

2.7 Jumper setting of Clock Generator for CPU frequency selection

	JP5	JP6	JP7
20MHz	ON	OFF	ON
25MHz	ON	ON	OFF
33MHz	OFF	ON	ON
40MHz	ON	OFF	OFF
DX4-25/75	ON	ON	OFF
DX4-33/100	OFF	ON	ON

Chapter 3

Award BIOS Setup

All personal computer use a BIOS, or Basic Input/Output system, to provide control for the hardware functions. When system is powered on or reset, the CPU is reset and BIOS will do the following:

- **Self-test** on CPU.
- Verify ROM BIOS checksum.
- Verify CMOS configuration chip.
- Initialize timer.
- Initialize DMA controller.
- Verify RAM memory.
- Install all BIOS function call utilities.
- Verify/initialize all system configurations, like keyboard, **floppy** drive, hard disk, **initialize** EGA or VGA if there is **any**.
- Hook to the add-in BIOS or expansion BIOS to perform initialization and driver link to the system.

Award's BIOS ROM has a built-in setup program that allow users to modify the basic system configuration. This type of information is stored in battery-backed RAM so that the setup information is retained when the power is turned off. When the system is power on or reset, the Award BIOS will display a copyright message on the screen, then the BIOS will perform the system diagnostics test and initialization. When all of the above tests have been passed, the message:

**“TO ENTER SETUP BEFORE BOOT PRESS CTRL-ALT-
ESC OR DEL KEY**

BIOS Setup

is displayed. If the [Del] key or Ctrl-Alt-Esc is pressed, the screen will be cleared and then the following message will be shown:

ROM ISA BIOS (XXXXXXXX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP LOAD BIOS DEFAULTS	LOAD SETUP DEFAULTS PASSWORD SETTING IDE HDD AUTO DETECTION SAVE & EXIT SETUP EXIT WITHOUT SAVING
Esc : Quit F10 : Save & Exit Setup	↓ ↑ → ← : Select Item (Shift)F2 : Change Color
Description of each function	

Figure 3-1 Main Menu

3.1 Standard CMOS Setup Menu

The items in Standard CMOS Setup Menu are divided into several categories. Each category includes none, one or more than one setup items. Use the arrow keys to **highlight** the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

Date (mm:dd:yy) : Wed, Apr 21 1993						
Time (hh:mm:ss) : 14:53:31						
Drive C: None (0Mb)	CYLS	HEADS	PRECOMP	LANDZONE	SECTORS	MODE
Drive D: None (0Mb)	0	0	0	0	0	-----
Drive A: 1.2M, 5.25 in.				Base Memory: 640K Extended Memory: 3328K Expanded Memory: 0K Other Memory: 128K <hr/> Total Memory: 4096K		
Drive B: None						
Video : MONO						
Halt On : All Errors						
Esc : Quit	↓ ↑ → ← : Select Item			PU/PD/ +/- : Modify		
F1 : Help	(Shift)F2 : Change Color			F3 : Toggle Calendar		

Figure 3-2 Standard CMOS Setup Menu

The setup program is **completely** menu-driven:

1. Use arrow keys to select entry of **Date, Time, Hard Disk(C/D), Floppy, Display** and **Keyboard**.
2. Use **PgUp/PgDn** key to modify the option of each entry.
3. Use **Esc** to exit.

The Award BIOS supports three HDD modes: **NORMAL, LBA, and LARGE**.

NORMAL mode: Generic **access** mode in which neither the BIOS nor the IDE controller will make any transformation during accessing. The maximum HDD size supported by the **NORMAL** mode is **528** Megabytes.

LBA mode: Logical Block Addressing mode is a new HDD accessing **method** to overcome the 528 Megabytes bottleneck. The number of cylinders, heads, and sectors shown in setup may not be the number physically contained in the HDD. During HDD accessing, the IDE controller will transform the logical address described by cylinder, head, and sector number into its own physical address inside the HDD. The maximum HDD size supported by the LBA mode is 8.4 Gigabytes.

LARGE mode: Some IDE **HDDs** contain more than 1024 cylinders without LBA support. This access mode tricks DOS (or other **OS**) that the number of cylinders is less than 1024 by dividing it by 2. At the same time, the number of heads is multiplied by 2. The maximum HDD size supported by LARGE mode is 1 Gigabytes.

3.2 BIOS Features Setup Menu

The BIOS Features setup program is equipped with a series of help screens and accessed by the <F1> key, which will display the available options for a particular configuration feature and special help for some of the options. If you don't really understand the meanings of each item, please don't change the **following** default values.

ROM ISA BIOS (XXXXXXXXXX) BIOS FEATURES SETUP AWARD SOFTWARE, INC.			
Typematic Rate Setting	: Enabled	Video BIOS Shadow	: Enabled
Typematic Delay (Msec)	: 250	C8000-CFFFF Shadow	: Disabled
Typematic Rate (Chars/Sec)	: 30	D0000-D7FFF Shadow	: Disabled
Quick Power on Self Test	: Enabled	D8000-DFFFF Shadow	: Disabled
Memory Parity Check	: Enabled		
IDE HDD Block Mode	: Disabled		
Boot Up NumLock Status	: On		
Boot Up Floppy Seek	: Disabled		
Swap Floppy Drive	: Disabled		
Boot Sequence	: A, C		
Boot up System Speed	: High		
Security Option	: Setup		
Virus Warning	: Enabled		
External cache	: Enabled		
CPU Internal Cache	: Enabled		
		Esc : Quit ↓ ↑ → ← : Select Item F1 : Help PU/PD/ + /- : Modify F5 : Old Values (Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

Figure 3-3 BIOS Feature Setup

A short description of screen items follows:

- Typematic Rate Setting** Enable this option to adjust the keystroke repeat rate.
- Typematic Delay (Msec)** Choose how long after you press a key that a character begins repeating.
- Typematic Rate (Chars/Six)** Choose the rate a Character keeps repeating.

Quick Power On Self Test	Enabled provides a fast POST at boot-up
Memory Parity Check	Enable this option for a Normal memory parity check. Disabled ignores memory parity check.
IDE HDD Block Mode	This option enables/disables the IDE HDD Block Mode function. Older HDDs do not support this function. (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.
Boot Up Floppy Seek	Enable this item and the BIOS searches for installed floppy disk drives to determine if they are 40 tracks (360K drive) or 80 tracks (720K, 1.2M, 1.44M or 2.88M drives). Disable this item and the BIOS does not search for floppy drive type by track number.
Swap Floppy Drive	Enabled changes the sequence of the A: and B: drives. (The Default setting is Disabled.)
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.
Boot Up System Speed	Choose High or Low. This item selects the speed the system runs immediately after power up.
security Option	Choose Setup or System. Use this feature to prevent unauthorized system boot-up or use of BIOS Setup.
	<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>

Virus Warning	Enable this option and a warning message appears when anything attempts to access the boot sector or hard disk partition table.
External Cache	This option enables/disables the external cache memory. (The Default setting is Enabled.)
CPU Internal Cache	This option enables/disables the CPU's internal cache. (The Default setting is Enabled.)
video or Adaptor BIOS Shadow	BIOS shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM .

3.4 Power Management Setup

The Power Management Setup option lets you set the system's power saving functions.

Power Management Setup for X-Enhanced CPU

Run the **PowerManagement** Setup on SL-Enhanced CPU (SMI CPU) as follows.

ROM ISA BIOS (XXXXXXXXXX)			
POWER MANAGEMENT SETUP			
AWARD SOFTWARE, INC.			
Power Management	: Disable	IRQ 6 (Floppy Disk)	: Enable
PM Control by APM	: No	IRQ 7 (LPT or LAN)	: Enable
Video Off Method	: V/H SYNC + Bank	IRQ 8 (RTC, OS2)	: Enable
Video Off Option	: Always On	IRQ 9 (Reserved)	: Enable
. * PM Timers . *		IRQ 10 (Reserved)	: Enable
I-100 Power Down	: Disable	IRQ 11 (Reserved)	: Enable
System Ooze	: Disable	IRQ 12 (Reserved)	: Enable
System Standby	: Disable	IRQ 14 (Hard Disk)	: Enable
system Suspend	: Disable	IRQ 15 (Resewed)	: Enable
. ' PM Event . *		Esc : Quit	
Local Master	: Disable	↑ ↓ ← → : Select Item	
Local Device	: Disable	F1 : Help PU/PD/ +/- : Modify	
Video Activities	: Disable	F5 : Old Values (Shift) F2 : Color	
DMA Activities	: Enable	F6 : Load BIOS Defaults	
IRQ 1 (Keyboard)	: Enable	F7 : Load Setup Defaults	
IRQ 3 (COM 2)	: Enable		
IRQ 4 (COM1)	: Enable		
IRQ 5 (LPT or LAN)	: Enable		

Figure 3-5 Power Management screen for W-Enhanced CPU

A short description of selected screen items follows:

Power Management	Options are as follows:
User Define	You define system power down times.
Disabled	Disables the Green PC Features. (Default)
Min Saving	Doze = 3 Hr Standby = 3 Hr Suspend = 3 Hr

Max Saving Doze = 10 **Sec**
 Standby = 10 **Sec**
 Suspend = 10 **Sec**

PM Control by APM Choose No (Default) or Yes. APM stands for Advanced Power Management. “Yes” makes your power management more flexible.

Video Off Method Choose DPMS, Blank screen or **V/H Sync + Blank** (Default). With this item V/H SYNC is controlled by software. If you have a VGA card that is not compatible with this option, switch to “Blank screen”, even though it consumes more power than “V/H SYNC + Blank”. If your VGA card and VGA monitor support VESA DPMS, switch the option to “DPMS”.

video Off Option Choose Always **On** (Default), Suspend -- Off, or Susp, Stby -- Off. This item shuts the video off when entering Suspend, Standby or Doze mode.

HDD Power Down Choose a time interval from 1 to **15** minutes or Disabled (Default). When the set time has elapsed, the BIOS sends a command to the HDD to enter standby (sleep) mode, turning off the motor. This function is only valid for IDE **HDDs** that support power saving function.

System Doze The default setting is Disabled. You can select time interval from 10 **sec** to 3Hrs. When the set time elapses without any PM event activity (Local Master, Local Device, Video Activities and DMA **Activeities, IRQn**) the system enters Doze mode.

In Doze mode, the system slows down (Deturbo). If the “Video Off Option” is set to “Always On”, the screen will shut off.

System Standby The default setting is Disabled. You can select time interval from 10 **sec** to 3Hrs. When the set time elapses without any PM event activity the system enters Standby mode.

In Standby mode, the system slow down (Deturbo), and SM Out changes to low. If the “Video Off Option” is set to “Susp, Stby — Off”, the screen will shut off.

System Suspend The default setting is Disabled. You can select time interval from 10 **sec** to 3Hrs. When the set time elapses without any PM event activity the system enters Standby mode.

In Suspend mode, the system slows down (Deturbo), SM Out changes to low, and the motherboard system frequency drops to **8MHz** (SL enhanced **CPUs** drop to **0MHz**). If the “Video Off Option” is set to “Suspend-Off”, the screen will shut off.

Local Master (Device) Choose Enabled or Disabled (Default). If Enabled the VESA Local Master (Device) card is monitored.

video Activities Choose Enabled or Disabled (Default). If Enabled video activities are monitored.

DMA Activities This item should always be Enabled (Default).

IRQn Enabled is the default setting for IRQ 8, the other IRQ defaults are Disabled.

Power Management Setup for Normal CPU

Run the Power Management Setup on Normal CPU (**Non-SMI** CPU) as follows.

There are two methods **IRQ** or **Chipset** of dealing with the Power Management on Normal CPU (Non-SMI CPU). You can select a method by follow function.

PM Mode Choose **Chipset**, **IRQ15** or **IRQ12** (Default). If your system use DOS. We suggest you to select “**IRQ15**” or “**IRQ12**”. If your system use other operating system (**OS/2**, **UNIX**, . . . etc.), you only can select “**Chipset**”.

1. Select PM Mode by IRQ and a screen with a list of items appears.

ROM ISA BIOS (XXXXXXXX)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: Disable	IRQ 5 (LPT or LAN)	: Enable
PM Mode	: IRQ12	IRQ 6 (Floppy Disk)	: Enable
PM Control by APM	: No	IRQ 7 (LPT or LAN)	: Enable
Video Off Method	: V/H SYNC + Bank	IRQ 8 (RTC, OS2)	: Enable
Video Off Option	: Always On	IRQ 9 (Reserved)	: Enable
* PM Timers *		IRQ 10 (Reserved)	: Enable
HDD Power Down	: Disable	IRQ 11 (Reserved)	: Enable
System Doze	: Disable	IRQ 12 (Reserved)	: Enable
System Standby	: Disable	IRQ 14 (Hard Disk)	: Enable
System Suspend	: Disable	IRQ 15 (Reserved)	: Enable
* PM Event *		Esc : Quit ↓ ↑ → ← : Select Item	
Local Master	: Disable	F1 : Help PU/PD/ +/- : Modify	
Local Device	: Disable	F5 : Old Values (Shift)F2 : Color	
Video Activities	: Disable	F6 : Load BIOS Defaults	
DMA Activities	: Enable	F7 : Load Setup Defaults	
IRQ 1 (Keyboard)	: Enable		
IRQ 3 (COM 2)	: Enable		
IRQ 4 (COM1)	: Enable		

Figure 3-6 Power Management screen For Normal CPU

All option and function in Figure 3-6 is same as in Figure 3-5.

2. Select PM Mode by Chipset and a screen with a list of items appears.

ROM ISA BIOS (XXXXXXXX)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: Disable	IRQ 7 (LPT or LAN)	: Enable
PM Mode	: Chipset	IRQ 8 (RTC, OS2)	: Enable
* PM Timers *		IRQ 9 (Resewed)	: Enable
HDD Power Down	: Disable	IRQ 10 (Resewed)	: Enable
System Standby	: Disable	IRQ 11 (Resewed)	: Enable
* PM Event *		IRQ 12 (Resewed)	: Enable
Local Master	: Disable	IRQ 14 (Hard Disk)	: Enable
Local Device	: Disable	IRQ 15 (Reserved)	: Enable
Video Activities	: Disable	Esc : Quit ↓ ↑ → ← : Select Item	
DMA Activities	: Enable	F1 : Help PU/PD/ +/- : Modify	
IRQ 1 (Keyboard)	: Enable	F5 : Old Values (Shift)F2 : Color	
IRQ 3 (COM 2)	: Enable	F6 : Load BIOS Defaults	
IRQ 4 (COM1)	: Enable	F7 : Load Setup Defaults	
IRQ 5 (LPT or LAN)	: Enable		
IRQ 6 (Floppy Disk)	: Enable		

Figure 3-7 Power Management screen for Normal CPU

Comparing with Figure 3-6, Figure 3-7 is less on “System Doze, System Suspend, Video Off Method and Video Off Option”.

All option and function in Figure 3-7 is same as in Figure 3-6, except the function of Standby mode. The Standby mode in Figure 3-7 means: motherboard system frequency downs to **8MHz**, and Display be off by hardware (SM Out) only. About SM Out connection, please refer Hardware Setup for more details(Page 2-3).

3.5 Load BIOS Default

BIOS Default indicates the values required by the system for the minimum performance. 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 >.

3.6 Load Setup Defaults

Setup Default indicates the most appropriate value of the system parameter which the system would be in maximum performance. 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 >.

3.7 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 JP21 to clear the CMOS RAM. All setup information is lost and you must run the BIOS setup program again.

3.8 IDE HDD Auto Detection

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