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**TRADEMARKS**

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**YOUR BEST CHOICE**

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# **CHAPTER 1 INTRODUCTION**

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## **1-1 OVERVIEW**

THIS MAIN BOARD COMBINES THE ADVANCED CAPABILITIES OF THE VIA® APOLLO MVP3 CHIPSETS WITH A HIGH PERFORMANCE CONCURRENT PCI LOCAL BUS ARCHITECTURE TO PROVIDE THE IDEAL PLATFORM FOR UNLEASHING THE UNSURPASSED SPEED AND POWER OF THE INTEL® PENTIUM® PROCESSOR, CYRIX® 6X86M1/6X86LM1/ 6X86MX/ 6X86MII AND AMD® K5/K6/K6-2 3D PROCESSORS, AND CAN BE EASILY UPGRADED FOR 321 PIN ZIF SOCKET.

THE PROCESSOR'S ADVANCED PERFORMANCE IS COMPLEMENTED BY A SECOND LEVEL WRITE BACK PB-SRAM UP TO 512KB AND MAIN MEMORY UP TO 256MB RAM. THE MAIN MEMORY IS INITIALED USING THE BOARD'S TWO 72-PIN SIMM SOCKETS AND TWO 168-PIN DIMM SOCKETS THAT ACCEPT EITHER THE NEW HIGH PERFORMANCE EDO, BEDO, OR FAST PAGE MODE DRAM.

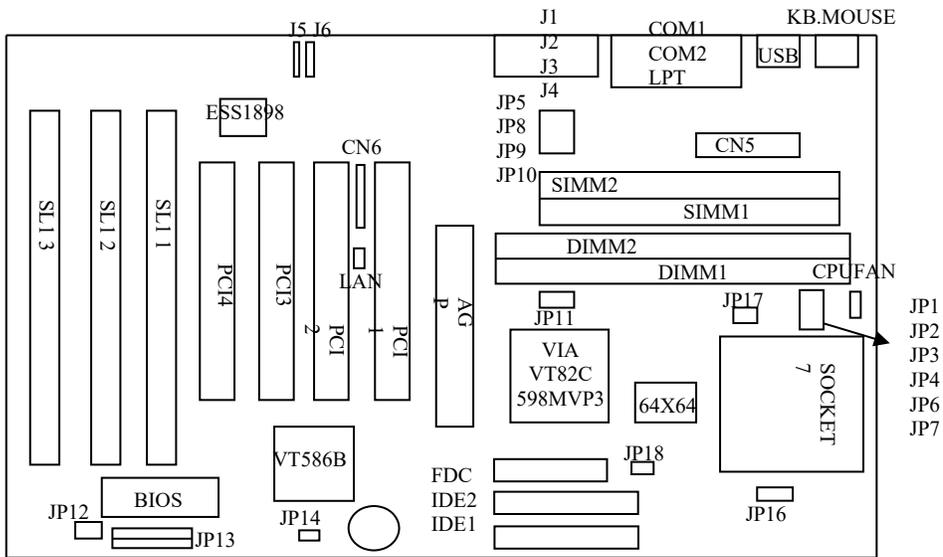




## CHAPTER 2 MAIN BOARD SPECIFICATION

\*\*\*\*\*

### 2-1 MAIN BOARD LAYOUT



## 2-2 JUMPER SETTINGS

YOUR BEST CHOICE

### INTEL® PENTIUM PROCESSOR INSTALLATION

CPU CLOCK	SYS. CLOCK	JP1	JP2	JP3	JP6	JP7	JP8	JP9	JP10	JP14	JP16	JP17	JP18	RATIO
P54C 90 MHZ 3.3V	60 MHZ	1-2	1-2	1-2	2-3	2-3	2-3	1-2	1-2	OPEN	1-2,5-6,7-8	OPEN	OPEN	1.5X
P54C 100 MHZ 3.3V	66 MHZ	1-2	1-2	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,5-6,7-8	OPEN	OPEN	1.5X
P54C 120 MHZ 3.3V	60 MHZ	2-3	1-2	1-2	2-3	2-3	2-3	1-2	1-2	OPEN	1-2,5-6,7-8	OPEN	OPEN	2X
P54C 133 MHZ 3.3V	66 MHZ	2-3	1-2	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,5-6,7-8	OPEN	OPEN	2X
P54C 150 MHZ 3.3V	60 MHZ	2-3	2-3	1-2	2-3	2-3	2-3	1-2	1-2	OPEN	1-2,5-6,7-8	OPEN	OPEN	2.5X
P54C 166 MHZ 3.3V	66 MHZ	2-3	2-3	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,5-6,7-8	OPEN	OPEN	2.5X
P55C 166 MHZ 2.8/3.3V	66 MHZ	2-3	2-3	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	7-8	1-2,3-4,5-6	OPEN	2.5X
P54C 180 MHZ 3.3V	60 MHZ	1-2	2-3	1-2	2-3	2-3	2-3	1-2	1-2	OPEN	1-2,5-6,7-8	OPEN	OPEN	3X
P54C 200 MHZ 3.3V	66 MHZ	1-2	2-3	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,5-6,7-8	OPEN	OPEN	3X
P55C 200MHZ 2.8/3.3V	66 MHZ	1-2	2-3	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	7-8	1-2,3-4,5-6	OPEN	3X
P55C 233MHZ 2.8/3.3V	66 MHZ	1-2	1-2	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	7-8	1-2,3-4,5-6	OPEN	3.5X

### AMD K5/K6/K6-2 3D PROCESSOR INSTALLATION

CPU CLOCK	SYS. CLOCK	JP1	JP2	JP3	JP6	JP7	JP8	JP9	JP10	JP14	JP16	JP17	JP18	RATIO
K5-PR90/PR120 3.52V	60 MHZ	1-2	1-2	1-2	2-3	2-3	2-3	1-2	1-2	OPEN	1-2,3-4,5-6,7-8	OPEN	OPEN	1.5X
K5-PR100/PR133 3.52V	66 MHZ	1-2	1-2	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,3-4,5-6,7-8	OPEN	OPEN	1.5X
K5-PR166 3.52V	66 MHZ	2-3	2-3	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,3-4,5-6,7-8	OPEN	OPEN	2.5X
K6-PR166 2.9/3.3V	66 MHZ	2-3	2-3	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,7-8	1-2,3-4,5-6	OPEN	2.5X
K6-PR200 2.9/3.3V	66 MHZ	1-2	2-3	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,7-8	1-2,3-4,5-6	OPEN	3X
K6-PR233 3.2/3.3V	66 MHZ	1-2	1-2	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	5-6,7-8	1-2,3-4,5-6	OPEN	3.5X
K6-PR233 3.3/3.3V	66 MHZ	1-2	1-2	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,5-6,7-8	1-2,3-4,5-6	OPEN	3.5X
K6-PR266 2.2/3.3V	66 MHZ	2-3	1-2	2-3	2-3	2-3	1-2	1-2	1-2	OPEN	3-4	1-2,3-4,5-6	OPEN	4X
K6-PR300 2.2/3.45V	66 MHZ	2-3	2-3	2-3	2-3	2-3	1-2	1-2	1-2	OPEN	3-4	1-2,3-4,5-6	CLOSE	4.5X
K6-PR333 2.2/3.45V	66 MHZ	1-2	2-3	2-3	2-3	2-3	1-2	1-2	1-2	OPEN	3-4	1-2,3-4,5-6	CLOSE	5X
K6-PR366 2.2/3.45V	66 MHZ	1-2	1-2	2-3	2-3	2-3	1-2	1-2	1-2	OPEN	3-4	1-2,3-4,5-6	CLOSE	5.5X
K6-PR333 2.2/3.45V	95 MHZ	1-2	1-2	1-2	1-2	2-3	2-3	1-2	2-3	OPEN	3-4	1-2,3-4,5-6	CLOSE	3.5X
K6-PR380 2.2/3.45V	95 MHZ	2-3	1-2	2-3	1-2	2-3	2-3	1-2	2-3	OPEN	3-4	1-2,3-4,5-6	CLOSE	4X
<b>*K6-2 250 2.2V/3.3V</b>	<b>100MHZ</b>	<b>2-3</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	OPEN	<b>3-4</b>	1-2,3-4,5-6	OPEN	<b>2.5X</b>
<b>*K6-2 266 2.2V/3.3V</b>	<b>66 MHZ</b>	<b>2-3</b>	<b>1-2</b>	<b>2-3</b>	<b>2-3</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>1-2</b>	OPEN	<b>3-4</b>	1-2,3-4,5-6	OPEN	<b>4X</b>
<b>*K6-2 300 2.2V/3.3V</b>	<b>100MHZ</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	OPEN	<b>3-4</b>	1-2,3-4,5-6	OPEN	<b>3X</b>
<b>*K6-2 350 2.2V/3.3V</b>	<b>100MHZ</b>	<b>1-2</b>	<b>1-2</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	OPEN	<b>3-4</b>	1-2,3-4,5-6	OPEN	<b>3.5X</b>
<b>*K6-2 400 2.2V/3.3V</b>	<b>100MHZ</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	OPEN	<b>3-4</b>	1-2,3-4,5-6	OPEN	<b>4X</b>
<b>*K6-2 450 2.2V/3.3V</b>	<b>100MHZ</b>	<b>2-3</b>	<b>2-3</b>	<b>2-3</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	OPEN	<b>3-4</b>	1-2,3-4,5-6	OPEN	<b>4.5X</b>
<b>*K6-2 500 2.2V/3.3V</b>	<b>100MHZ</b>	<b>1-2</b>	<b>2-3</b>	<b>2-3</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	OPEN	<b>3-4</b>	1-2,3-4,5-6	OPEN	<b>5X</b>

CYRIX® 6X86 PROCESSOR INSTALLATION

CPU CLOCK	SYS. CLOCK	JP1	JP2	JP3	JP6	JP7	JP8	JP9	JP10	JP14	JP16	JP17	JP18	RATIO
150+ M1 3.52V	60 MHZ	2-3	1-2	1-2	2-3	2-3	2-3	1-2	1-2	OPEN	1-2,3-4,5-6,7-8	OPEN	OPEN	2X
166+ M1 3.52V	66 MHZ	2-3	1-2	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,3-4,5-6,7-8	OPEN	OPEN	2X
6X86L 150 2.8/3.3V	60 MHZ	2-3	1-2	1-2	2-3	2-3	2-3	1-2	1-2	OPEN	7-8	1-2,3-4,5-6	OPEN	2X
6X86L 166 2.8/3.3V	66 MHZ	2-3	1-2	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	7-8	1-2,3-4,5-6	OPEN	2X
6X86L 200 2.8/3.3V	75 MHZ	2-3	1-2	1-2	2-3	2-3	1-2	2-3	1-2	OPEN	7-8	1-2,3-4,5-6	OPEN	2X
6X86MX 166 2.9/3.3V	66 MHZ	2-3	1-2	1-2	2-3	2-3	1-2	1-2	1-2	OPEN	1-2,7-8	1-2,3-4,5-6	OPEN	2X
6X86MX 166 2.9/3.3V	60 MHZ	2-3	2-3	1-2	2-3	2-3	2-3	1-2	1-2	OPEN	1-2,7-8	1-2,3-4,5-6	OPEN	2.5X
6X86MX 200 2.9/3.3V	75 MHZ	2-3	1-2	1-2	2-3	2-3	1-2	2-3	1-2	OPEN	1-2,7-8	1-2,3-4,5-6	OPEN	2X
6X86MX 233 2.9/3.3V	75 MHZ	2-3	2-3	1-2	2-3	2-3	1-2	2-3	1-2	OPEN	1-2,7-8	1-2,3-4,5-6	OPEN	2.5X
<b>6X86MX266 2.9/3.3V</b>	<b>83 MHZ</b>	<b>2-3</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>2-3</b>	<b>2-3</b>	<b>1-2</b>	OPEN	<b>1-2,3-4,5-6</b>	1-2,3-4,5-6	OPEN	<b>2.5X</b>
<b>6X86MX300 2.9/3.3V</b>	<b>66 MHZ</b>	<b>1-2</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>1-2</b>	OPEN	<b>1-2,7-8</b>	1-2,3-4,5-6	OPEN	<b>3.5X</b>
<b>6X86MX333 2.9/3.3V</b>	<b>75 MHZ</b>	<b>1-2</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>2-3</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	OPEN	<b>1-2,7-8</b>	1-2,3-4,5-6	OPEN	<b>3.5X</b>
<b>6X86MX350 2.9/3.3V</b>	<b>75 MHZ</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>2-3</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	OPEN	<b>1-2,7-8</b>	1-2,3-4,5-6	OPEN	<b>4X</b>
<b>6X86MX-2 233 2.9/3.3V</b>	<b>100MHZ</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	OPEN	<b>1-2,7-8</b>	1-2,3-4,5-6	OPEN	<b>2X</b>
<b>6X86MX-2 333 2.9/3.3V</b>	<b>100MHZ</b>	<b>2-3</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	OPEN	<b>1-2,7-8</b>	1-2,3-4,5-6	OPEN	<b>2.5X</b>
<b>6X86MX-2 350 2.9/3.3V</b>	<b>100MHZ</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	<b>1-2</b>	<b>1-2</b>	<b>2-3</b>	OPEN	<b>1-2,7-8</b>	1-2,3-4,5-6	OPEN	<b>3X</b>

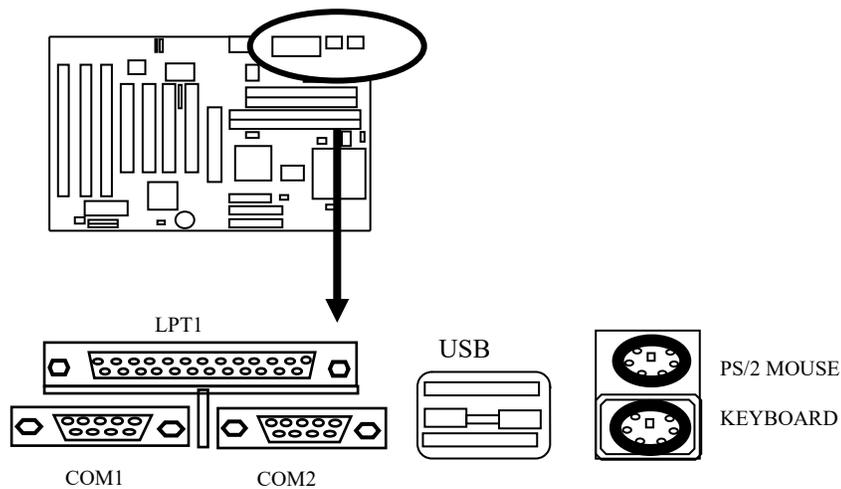
2-3 CONNECTORS & JUMPER SETTING

**CONNECTORS**

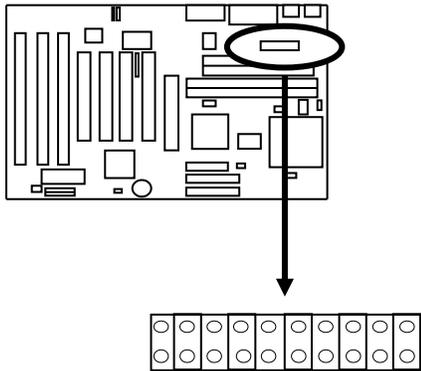
**CN1** : PS/2 MOUSE CONNECTOR & KEYBOARD CONNECTOR

**CN2**: USB(UNIVERSL SERIAL BUS) CONNECTOR

**COM1/COM2/LPT**: SERIAL PORT 1 CONNECTOR, SERIAL PORT2 CONNECTOR, PRINTER PORT CONNECTOR

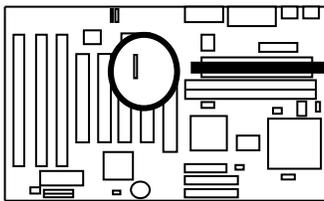


**CN5- ATX POWER SUPPLY CONNECTOR**



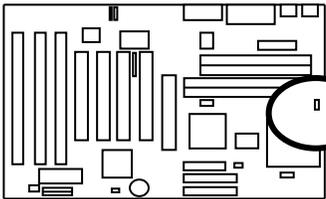
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	+3.3V DC	11	+3.3V DC
2	+3.3V DC	12	-12V DC
3	GROUND	13	GROUND
4	+5V DC	14	SOFT-POWER
5	+5V DC	15	GROUND
6	+5V DC	16	GROUND
7	GROUND	17	GROUND
8	POWER GOOD	18	-5V DC
9	+5V STANDBY	19	+5V DC
10	+12V DC	20	+5V DC

**CN6: IR (INFRA-RED ) CONNECTOR**

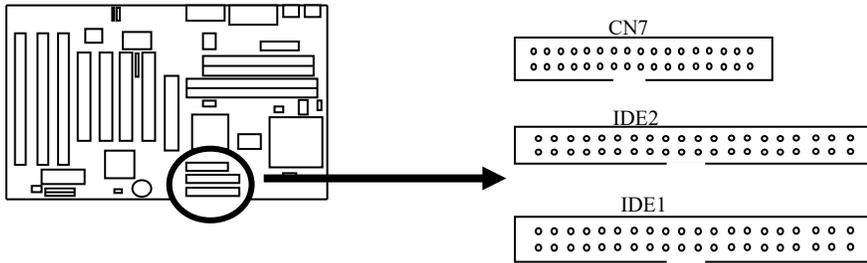


PIN	SIGNAL NAME
1	IRRX
2	GROUND
3	IRTX
4	+5V DC
5	IRRXH
6	+5V DC
7	GROUND

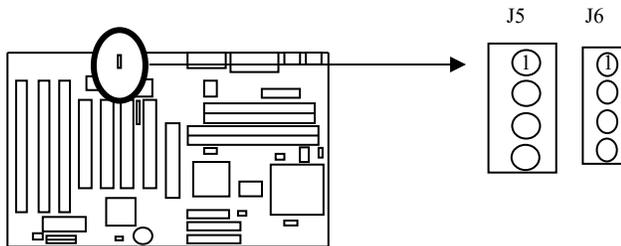
**CPU FAN**



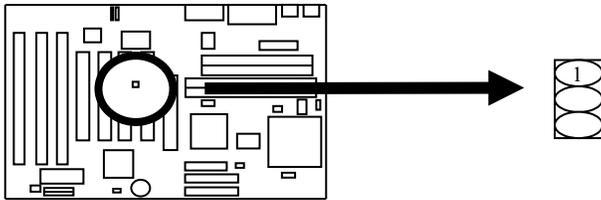
**CN7:** FLOPPY DISK CONNECTOR  
**IDE2:** SECONDARY HDD CONNECTOR  
**IDE1:** PRIMARY HDD CONNECTOR



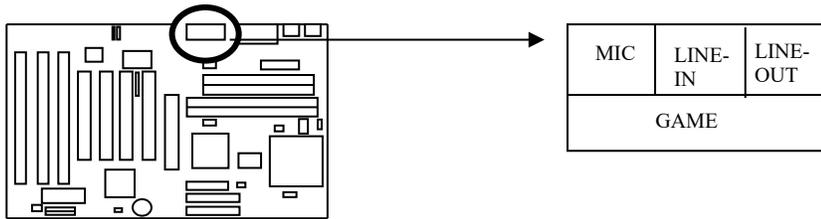
**J5 & J6:** CD IN



**LAN**

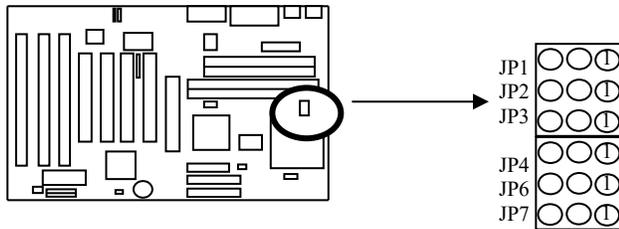


**LINE IN, LINE OUT, MIC**



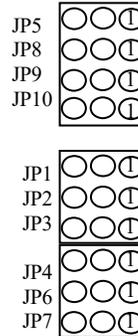
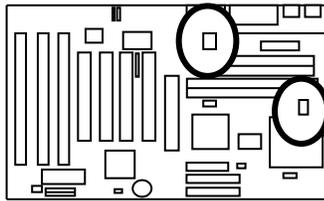
## **JUMPER SETTING**

### **JP1-JP3 - CPU/BUS RATIO**



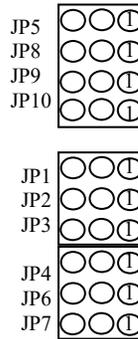
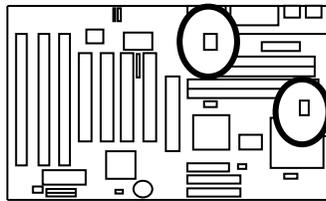
RATIO	JP1	JP2	JP3
1.5/3.5	1-2	1-2	1-2
2.0	2-3	1-2	1-2
2.5	2-3	2-3	1-2
3..0	1-2	2-3	1-2
4.0	2-3	1-2	2-3
4.5	2-3	2-3	2-3

**JP4& JP5: SDRAM CLOCK FREQUENCY**



JP4	JP5	SDRAM CLOCK CLK
2-3	1-2	SAME WITH CPU CLK
1-2	2-3	66MHZ

**JP6 - JP10 - CPU FREQUENCY SELECTOR**

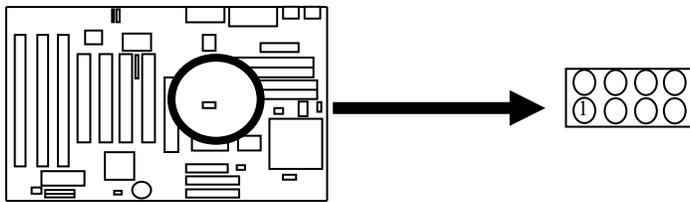


JUMPER	60MHZ	66.6MHZ	75MHZ	83.3MHZ	95MHZ	100MHZ	112MHZ
JP6	2-3	2-3	2-3	1-2	1-2	1-2	1-2
JP7	2-3	2-3	2-3	2-3	2-3	2-3	2-3
JP8	2-3	1-2	1-2	2-3	2-3	1-2	1-2

JP9	1-2	1-2	2-3	2-3	YOUR BEST CHOICE	1-2	2-3
JP10	1-2	1-2	1-2	1-2		2-3	2-3

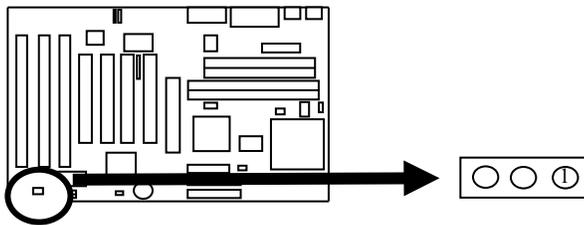
**Warning:** the frequency spec. of via chipset bus clock is setted us 100MHZ  
 When you set the frequency of chipset over 100MHZ, We don't promise the over 100MHZ setting could keep the system continue to work stable..

**JP11 - DIMM VOLTAGE SELECTOR**



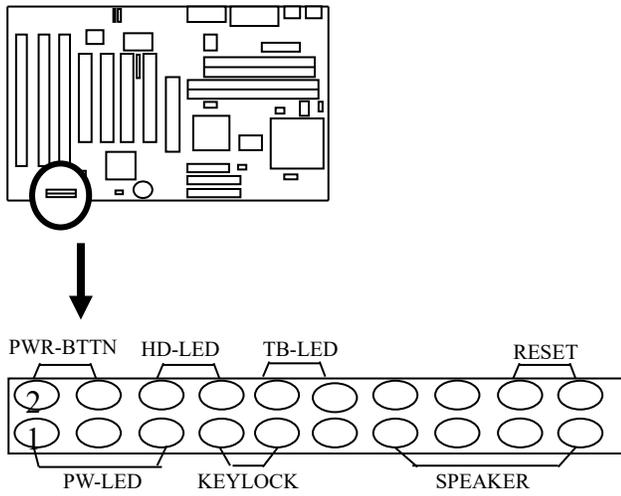
JP11	DIMM VOLTAGE SELECTOR
1-2,3-4	3V
5-6,7-8	5V

**JP12: FLASH ROM VOLTAGE SELECTOR**

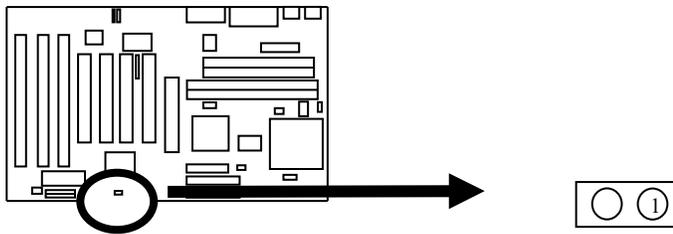


JP12	FLASH ROM VOLTAGE SELECTOR
1-2	5V (SST®,WINBOND®)
2-3	12V (INTEL®,MXIC®)

**JP13: CASE CONNECTOR**

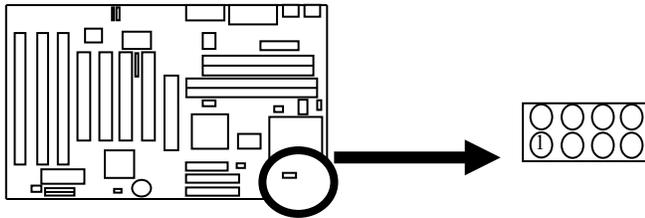


**JP14: CMOS STATUS**



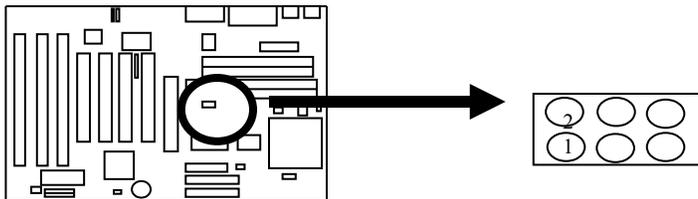
<b>JP14</b>	<b>CMOS STATUS</b>
OPEN	NORMAL
CLOSE	CLEAR CMOS

**JP16: CPU VOLTAGE SELECTOR**



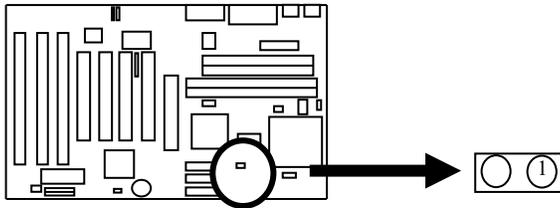
<b>JP16</b>	<b>VCORE</b>
1-2	2.1V
3-4	2.2V
1-2,3-4,5-6	2.7V
7-8	2.8V
1-2,7-8	2.9V
5-6,7-8	3.2V
1-2,5-6,7-8	3.3V
1-2,3-4,5-6,7-8	3.5V

**JP17: CPU VOLTAGE SELECTOR**



<b>JP17</b>	<b>CPU VOLTAGE SELECTOR</b>
OPEN	SINGLE VOLTAGE CPU
1-2,2-3-4, 5-6	DUAL VOLTAGE CPU

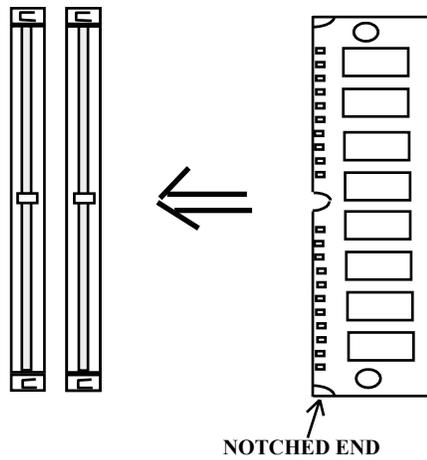
**JP18: VIO VOLTAGE SELECTOR**



<b>JP18</b>	<b>VIO</b>
OPEN	3.3V
CLOSE	3.45V

### 2-3 SIMM MODULE INSTALLATION PROCEDURES

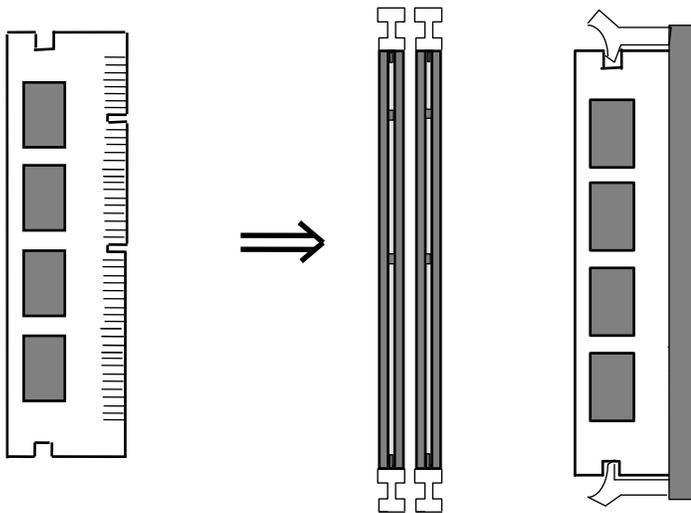
PRESS THE MEMORY MODULE FIRMLY INTO PLACE STARTING AT A 45 DEGREE ANGLE MAKING SURE THAT ALL THE CONTACTS ARE ALIGNED WITH THE SOCKET.



## 2-4 DIMM MEMORY INSTALLATION PROCEDURES

INSERT THE MODULE AS SHOWN. DUE TO DIFFERENT NUMBER OF PINS ON EITHER SIDE OF THE BREAKS, THE MODULE WILL ONLY FIT IN THE ORIENTATION AS SHOWN. DRAM SIMM MODULES HAVE THE SAME PIN CONTACT ON BOTH SIDES. SDRAM DIMM MODULES HAVE DIFFERENT PIN CONTACTS ON EACH SIDE AND THEREFORE HAVE A HIGHER PIN DENSITY.

**EDO DIMM SUPPORTS EITHER 3.3V OR 5V. THE SYSTEM MUST USE PC-100 100 MHZ DIMM FOR 100 MHZ CPU.**



## 2-5 MEMORY CHART

THIS MAIN BOARD CONTAINS 2 BY 72-PIN SIMM SOCKETS (BANK0: SIMM1, SIMM2 OR 2 BY 168-PIN DIMM SOCKET (DIMM 1 & DIMM2). MEMORY CAN BE INSTALLED IN A VARIETY OF CONFIGURATION. PLEASE REFERS TO THE FOLLOWING CHART:

TOTAL MEMORY	BANK 1 (DIMM1)	BANK 2 (DIMM2)	BANK0 (SIMM1, SIMM2)
8MB	8MB		
8MB			4MB&4MB
12MB	8MB	4MB	
16MB	8MB	8MB	
16MB			8MB&8MB
24MB	16MB	8MB	
32MB	16MB	16MB	
32MB	32MB		
32MB			16MB&16MB
40MB	32MB	8MB	
48MB	32MB	16MB	
64MB	32MB	32MB	
64MB			32MB&32MB
64MB	64MB		
72MB	64MB	8MB	
80MB	64MB	16MB	
96MB	64MB	32MB	
128MB	64MB	64MB	
128MB			64MB&64MB

**NOTE:** IT IS NOT SUGGESTED TO MIX UP SIMM MODULES AND DIMM MODULES IN THE SAME SYSTEM, OR THE SYSTEM MAY GET UNSTABLE.

**NOTE:** EDO DIMM SUPPORTS EITHER 3.3V OR 5V. WITH 100 MHZ CPU, IT IS REQUIRED TO USE PC-100 100 MHZ DIMM .

## CHAPTER 3 BIOS SETUP

\*\*\*\*\*

### ROM PCI/ISA BIOS CMOS SETUP UTILITY

AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION SETUP	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP*
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Color
Onboard I/O, IRQ, DMA Assignment	

**FIGURE 1**

AWARD'S ROM BIOS PROVIDES A BUILT-IN SETUP PROGRAM WHICH ALLOWS USER TO MODIFY THE BASIC SYSTEM CONFIGURATION AND HARDWARE PARAMETERS. THE MODIFIED DATA WILL BE STORED IN A BATTERY-BACKED CMOS RAM SO DATA WILL BE RETAINED EVEN WHEN THE POWER IS TURNED OFF. IN GENERAL, THE INFORMATION SAVED IN THE CMOS RAM STAY UNCHANGED UNLESS THERE IS CONFIG. CHANGE IN THE SYSTEM, SUCH AS HARDISK DRIVER REPLACEMENT OR CHANGES OF NEW EQUIPMENT.

IT IS POSSIBLE THAT CMOS HAS A BATTERY FAILURE WHICH CAUSES DATA LOSS IN CMOS RAM. IF SO, RE-ENTERING SYSTEM CONFIG. PARAMETERS BECOMES NECESSARY.

#### **TO ENTER SETUP PROGRAM**

**YOUR BEST CHOICE**  
POWER ON THE COMPUTER AND PRESS <DEL> KEY IMMEDIATELY,  
WHICH BRINGS YOU INTO BIOS CMOS SETUP UTILITY.

THE MENU DISPLAYS ALL THE MAJOR SELECTION ITEMS AND  
ALLOWS USER TO SELECT ANY OF SHOWN ITEMS. THE  
SELECTION IS MADE BY MOVING CURSOR (PRESS ANY  
DIRECTION KEY) TO THE ITEM AND PRESS "ENTER" KEY. AN ON  
LINE HELPS MESSAGE IS DISPLAYED AT THE BOTTOM OF THE  
SCREEN AS CURSOR IS MOVING TO VARIOUS ITEMS WHICH  
PROVIDES USER BETTER UNDERSTANDING OF EACH FUNCTION.  
WHEN A SELECTION IS MADE, THE MENU OF SELECTED ITEM  
WILL APPEAR. THUS, THE USER CAN MODIFY ASSOCIATED  
CONFIGURATION PARAMETERS.

3-1 STANDARD CMOS SETUP

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

Date (mm:dd:yy) : Thu, June 4 1998								
Time (hh:mm:ss) : 14 : 11 : 1								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0	0	0	0	0	0	AUTO
Primary Slave	: Auto	0	0	0	0	0	0	AUTO
Secondary Master	: Auto	0	0	0	0	0	0	AUTO
Secondary Slave	: Auto	0	0	0	0	0	0	AUTO
Drive A	: 1.44M, 3.5 in.							
Drive B	: None							
Video	: EGA/VGA							
Halt On	: All , But Keyboard							
						Base Memory : 640K		
						Extended Memory : 261120K		
						Other Memory : _____		
						384K		
						Total Memory : 262144K		
ESC	: Quit	↑↓→← : Select Item				PU/PD/+/- : Modify		
F1	: Help	(Shift) F2 : Change Color						

FIGURE 2

THE STANDARD CMOS SETUP SCREEN IS DISPLAYED AS ABOVE FIG.2. SYSTEM BIOS AUTOMATICALLY DETECTS MEMORY SIZE. NO CHANGES ARE NECESSARY SINCE IT HAS A FEW ITEMS FOR SETTING. EACH ITEM MAY HAVE ONE OR MORE OPTION SETTINGS. IT ALLOWS YOU TO CHANGE THE SYSTEM DATE AND TIME, IDE HARD DISK, FLOPPY DISK DRIVE TYPES FOR DRIVE A: AND B: BOOT UP VIDEO DISPLAY MODE, AND POST ERROR HANDLING SELECTION. 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.

## **HARD DISK CONFIGURATIONS**

**TYPE :**

SELECT FROM "1" TO "45" TO FILL IN REMAINING FIELDS WITH REDEFINED VALUES OF DISK DRIVES. SELECT "USER" TO FILL IN THE REMAINING FIELDS. SELECT "AUTO" TO DETECT THE HDD TYPE AUTOMATICALLY.

**SIZE :**

THE HARD DISK SIZE. THE UNIT IS MEGA BYTE

**CYLS :**

THE CYLINDER NUMBER OF THE HARD DISK

**HEAD :**

THE READ/WRITE HEAD NUMBER OF HARD DISK. THE RANGE IS FROM "1" TO "16"

**PRECCOMP :**

THE CYLINDER NUMBER AT WHICH THE DISK DRIVE CHANGES THE WRITTEN TIMING

**LANDZ :**

THE CYLINDER NUMBER THAT THE DISK DRIVE HEADS (READ/WRITE) ARE SEATED WHEN THE DISK DRIVE IS PARKED

**SECTOR :**

THE SECTOR NUMBER OF EACH TRACK DEFINED ON THE HARD DISK. THE RANGE IS FROM "1" TO "64."

**MODE :**

SELECT "AUTO" TO DETECT THE MODE TYPE AUTOMATICALLY. IF YOUR HARD DISK SUPPORTS THE LBA MODE, SELECT "LBA" OR "LARGE". HOWEVER, IF YOUR HARD DISK CYLINDER IS MORE THAN 1024 AND DOES NOT SUPPORT THE LBA FUNCTION, YOU HAVE TO SET AT "LARGE". SELECT "NORMAL" IF YOUR HARD DISK SUPPORTING CYLINDER IS BELOW 1024.

3-2 BIOS FEATURES SETUP

ROM PCI/ISA BIOS  
BIOS FEATURES SETUP

AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: C, A, SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Normal		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup	ESC : Quit	↑↓→← : Select Item
IDE Second Channel Control	: Enabled	F1 : Help	PU/PD/+/- : Modify
PCI/VGA Palette Snoop	: Disabled	F5 : Old Values	(Shift) F2 : Color
OS Select For DRAM > 64MB	: Non-OS2	F6 : Load BIOS Defaults	
Report No FDD For WIN 95	: No	F7 : Load Setup Defaults	

FIGURE 3

SELECTING THE "**BIOS FEATURE SETUP**" OPTION IN THE CMOS SETUP UTILITY MENU ALLOWS USER TO CHANGE SYSTEM RELATED PARAMETERS IN THE DISPLAY MENU. THIS MENU SHOWS ALL OF THE MANUFACTURER'S DEFAULT VALUES OF SV-P55V. AGAIN, USER CAN MOVE THE CURSOR BY PRESSING DIRECTION KEYS AND <PGDN> OR <PGUP> KEY TO MODIFY THE PARAMETERS. PRESSING [F1] KEY TO DISPLAY HELP MESSAGE OF THE SELECTED ITEM. THE SETUP PROGRAM ALSO PROVIDES 2 CONVENIENT WAYS TO LOAD THE DEFAULT PARAMETER DATA FROM CMOS [F7] AREA IF SHOWN DATA IS CORRUPTED. THIS PROVIDES THE SYSTEM WITH A CAPABILITY TO RECOVER FROM ANY POSSIBLE ERROR.

**VIRUS WARNING:**

WHEN ENABLED, IT ASSIGNS THE BIOS TO MONITOR THE MASTER BOOT SECTOR AND THE DOS BOOT SECTOR OF THE FIRST HARD DISK DRIVE. THE OPTIONS ARE: **ENABLED, DISABLED (DEFAULT).**

**CPU INTERNAL CACHE:**

WHEN ENABLED, IT IMPROVES THE SYSTEM PERFORMANCE. DISABLE THIS ITEM WHEN TESTING OR TROUBLE-SHOOTING. THE OPTIONS ARE: **ENABLED (DEFAULT), DISABLED**

**EXTERNAL CACHE:**

WHEN ENABLED, IT SUPPORTS AN OPTIONAL CACHE SRAM. THE OPTIONS ARE: **ENABLED (DEFAULT), DISABLED.**

**QUICK POWER ON SELF TEST:**

WHEN ENABLED, IT ALLOWS THE BIOS TO BYPASS THE EXTENSIVE MEMORY TEST. THE OPTIONS ARE : **ENABLED(DEFAULT), DISABLED .**

**BOOT SEQUENCE:**

ALLOWS THE SYSTEM BIOS TO TRY FIRST TO BOOT THE OPERATING SYSTEM FROM THE SELECTED DISK DRIVE. THE OPTIONS ARE : **A, C, SCSI ; C, A, SCSI(DEFAULT); C, CDROM, A; CDROM, C, A; D, A, SCSI; E, A, SCSI; F, A, SCSI; SCSI, A, C; SCSI, C, A; C ONLY; LS/ZIP, C.**

**SWAP FLOPPY DRIVE:**

WHEN ENABLED, IT ALLOWS YOU TO SWITCH THE ORDER IN WHICH THE OPERATING SYSTEM ACCESSES THE FLOPPY DRIVES DURING BOOT UP. THE OPTIONS ARE : **ENABLED, DISABLED (DEFAULT)**

**BOOT UP FLOPPY SEEK:**

WHEN ENABLED, IT ASSIGNS THE BIOS TO PERFORM FLOPPY DISKETTE DRIVE TESTS BY ISSUING THE TIME-CONSUMING SEEK COMMANDS. THE OPTIONS ARE : **ENABLED (DEFAULT), DISABLED**

**BOOT UP NUMLOCK STATUS:**

WHEN SET TO ON, IT ALLOWS THE BIOS TO AUTOMATICALLY ENABLE THE NUM LOCK FUNCTION WHEN THE SYSTEM BOOTS UP. THE OPTIONS ARE: **ON (DEFAULT), OFF.**

**PORT 92H FAST A20:**

WHEN ENABLED, IT ALLOWS THE A20G BUS LINE SIGNAL GENERATED FROM THE CHIPSET 82C586 PC/AT TO DIRECTLY PASS TO PORT 92H, INSTEAD OF THE KEYBOARD CONTROLLER. IT WILL SPEED UP THE SYSTEM PERFORMANCE. THE OPTIONS ARE **FAST, NORMAL (DEFAULT).**

**TYPEMATIC RATE SETTING:**

THE TERM "TYPEMATIC" MEANS THAT WHEN A KEYBOARD KEY IS HELD DOWN, THE CHARACTER IS REPEATEDLY ENTERED UNTIL THE KEY IS RELEASED. WHEN THIS ITEM IS ENABLED, YOU MAY CHANGE THE TYPEMATIC REPEAT RATE. THE OPTIONS ARE : **DISABLED (DEFAULT), ENABLED**

**TYPEMATIC RATE (CHARS/SEC):**

IT SETS THE RATE OF A CHARACTER REPEAT WHEN THE KEY IS HELD DOWN. THE OPTIONS ARE: **6 (DEFAULT), 8, 10, 12, 15, 20, 24, 30.**

**TYPEMATIC DELAY (MSEC):**

IT SETS THE DELAY TIME BEFORE A CHARACTER IS REPEATED. THE OPTIONS ARE: 250 (DEFAULT), 500, 750, 1000 MILLISECOND.

**SECURITY OPTION:**

ALLOWS YOU TO SET THE SECURITY LEVEL OF THE SYSTEM. THE OPTIONS ARE : **SETUP (DEFAULT), SYSTEM.**

**PCI/VGA PALETTE SNOOP:**

WHEN ENABLED, IT ALLOWS YOU TO INSTALL AN ENHANCED GRAPHICS ADAPTER CARD. IF YOUR GRAPHICS ADAPTER CARD DOES NOT SUPPORT THE PALETTE SNOOP FUNCTION, PLEASE

SET AT **DISABLE** TO AVOID SYSTEM MALFUNCTION. THE OPTIONS ARE: **ENABLED, DISABLED (DEFAULT)**.

**VIDEO BIOS SHADOW:**

WHEN ENABLED, IT ALLOWS THE BIOS TO COPY THE VIDEO ROM CODE OF THE ADD-ON VIDEO CARDS TO THE SYSTEM MEMORY FOR FASTER ACCESS. THE OPTIONS ARE : **ENABLED (DEFAULT), DISABLED**.

**C8000-CBFFF TO DC000-DFFFF SHADOW:**

WHEN ENABLED, IT ALLOWS THE BIOS TO COPY THE BIOS ROM CODE OF THE ADD-ON CARD TO SYSTEM MEMORY FOR FASTER ACCESS. IT MAY IMPROVE THE PERFORMANCE OF THE ADD-ON CARD. SOME ADD-ON CARDS WILL NOT FUNCTION PROPERLY IF ITS BIOS ROM CODE IS SHADOWED. TO USE THESE OPTIONS CORRECTLY, YOU NEED TO KNOW THE MEMORY ADDRESS RANGE USED BY THE BIOS ROM OF EACH ADD-ON CARD. THE OPTIONS ARE: **ENABLED, DISABLED (DEFAULT)**.

3-3 CHIPSET FEATURES SETUP

ROM PCI/ISA BIOS  
CMOS SETUP UTILITY

CHIPSET FEATURES SETUP			
Band 0/1 DRAM Timing	: FP/EDO 70ns	OnChip USB	: Disabled
Band 2/3 DRAM Timing	: SDRAM 10ns	Auto Detect DIMM/PCI CLK	: Enabled
Band 4/5 DRAM Timing	: SDRAM 10ns	Spread spectrum Modulated	: Disabled
SDRAM Cycle Length	: 3		
DRAM Read Pipeline	: Enabled		
Cache Rd + CPU Wt Pipeline	: Enabled		
Cache Timing	: Fast	ESC : Quit	↑↓→← : Select Item
Video BIOS Cacheable	: Enabled	F1 : Help	PU/PD/+/- : Modify
System BIOS Cacheable	: Enabled	F5 : Old Values	(Shift) F2 : Color
Memory Hole At 15Mb Addr.	: Disabled	F6 : Load BIOS Defaults	
AGP Aperture Size	: 64M	F7 : Load Setup Defaults	

FIGURE 4

**VIDEO BIOS CACHEABLE:**

WHEN ENABLED, IT ALLOWS THE SYSTEM TO USE THE VIDEO BIOS CODES C0000H-C7FFFH FROM CACHE, INSTEAD OF THE SLOWER DRAMS OR ROMS. VIDEO BIOS MUST BE SHADOWED FIRST. THE OPTIONS ARE: ENABLED (DEFAULT), DISABLED.

**SYSTEM BIOS CACHEABLE:**

WHEN ENABLED, IT ALLOWS THE ROM AREA E0000H-FFFFFFH TO BE CACHEABLE WHEN CACHE CONTROLLER IS ACTIVATED. THE OPTIONS ARE: ENABLED (DEFAULT), DISABLED.

**MEMORY HOLE AT 15MB ADDR.:**

WHEN ENABLED, THE MEMORY HOLE AT THE 15MB ADDRESS WILL BE RELOCATED TO THE 15~16MB ADDRESS RANGE OF THE ISA CYCLE WHEN THE PROCESSOR ACCESSES THE 15~16MB ADDRESS AREA. WHEN DISABLED, THE MEMORY HOLE AT THE 15MB ADDRESS WILL BE TREATED AS A DRAM CYCLE WHEN THE PROCESSOR ACCESSES THE 15~16MB ADDRESS. THE OPTIONS ARE: **ENABLED, DISABLED (DEFAULT).**

**ONCHIP USB :**

DEFAULT IS DISABLE. IF THE SYSTEM USES RELEVANT **USB DEVICES**, FIRST ENABLE **“ASSIGN IRQ FOR USB”(REFER TO PAGE 33 & 34)**. THEN GO TO CHIPSET FEATURE’S SETUP, AND CHOOSE **“ENABLE”** IN **“ON CHIP USB.”** THE OTHER LINE **“USB KEYBOARD SUPPORT”** WILL APPEAR AS BELOW.

3-4 POWER MANAGEMENT SETUP

ROM PCI/ISA BIOS  
POWER MANAGEMENT SETUP

AWARD SOFTWARE, INC.

Power Management	: User Define	Primary INTR	: ON
PM Control by APM	: Yes	IRQ3 (COM 2)	: Primary
Video Off Option	: Suspend -> Off	IRQ4 (COM 1)	: Primary
Video Off Method	: V/H SYNC+Blank	IRQ5 (LPT 2)	: Primary
MODEM Use IRQ	: 3	IRQ6 (Floppy Disk)	: Primary
Soft-off by PWR-BTTN	: Delay 4 Sec	IRQ7 (LPT 1)	: Primary
	** PM Timers **	IRQ8 (RTC Alarm)	: Disabled
HDD Power Down	: Disabled	IRQ9 (IRQ2 Redir)	: Secondary
Doze Mode	: Disabled	IRQ10 (Reserved)	: Secondary
Suspend Mode	: Disabled	IRQ11 (Reserved)	: Secondary
	** PM Events **	IRQ12 (PS/2 Mouse)	: Primary
VGA	: OFF	IRQ13 (Coprocessor)	: Primary
LPT & COM	: LPT/COM	IRQ14 (Hard Disk)	: Primary
HDD & FDD	: ON	IRQ15 (Reserved)	: Disabled
DMA/Master	: OFF	ESC : Quit	↑↓→← : Select Item
Modem Ring Resume	: Disabled	F1 : Help	PU/PD/+/- : Modify
RTC Alarm Resume	: Disabled	F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

FIGURE 5

**POWER MANAGEMENT:**

WHEN ENABLE, IT ALLOWS YOU TO USE POWER MANAGEMENT FEATURES.

**PM CONTROL BY APM:**

THE OPTION "NO" ALLOWS THE BIOS TO IGNORE THE APM (ADVANCED POWER MANAGEMENT) SPECIFICATION. SELECTING "YES" ALLOWS THE BIOS TO WAIT FOR APM'S PROMPT BEFORE IT ENTERS DOZE MODE, STANDBY MODE, OR SUSPEND MODE. IF APM IS INSTALLED, IT WILL PROMPT BIOS TO SET THE SYSTEM INTO THE POWER SAVING MODE AFTER ALL TASKS ARE DONE.

**VIDEO OFF OPTION:**

THIS FEATURE PROVIDES THE SELECTIONS OF THE VIDEO DISPLAY POWER SAVING MODE. THE OPTION "**SUSPEND -> OFF**" ALLOWS THE DISPLAY BLANKS IF THE SYSTEM ENTERS SUSPEND MODE. THE OPTION "**ALL MODES -> OFF**" ALLOWS THE VIDEO DISPLAY BANKS IF THE SYSTEM ENTERS DOZE MODE OR SUSPEND MODE. THE OPTION "**ALWAYS ON**" ALLOWS THE VIDEO DISPLAY TO STAY IN STANDBY MODE EVEN THE SYSTEM ENTERS DOZE OR SUSPEND MODE.

**VIDEO OFF METHOD:**

THE OPTION "**V/H SYNC+ BLANK**" ALLOWS THE BIOS TO BLANK OFF SCREEN DISPLAY BY TURNING OFF THE V-SYNC SIGNALS SENT FROM ADD-ON VGA CARD. "**DPMS SUPPORTED**" ALLOWS THE BIOS TO BLANK OFF SCREEN DISPLAY BY YOUR ADD-ON VGA CARD WHICH SUPPORTS DPMS. (DISPLAY POWER MANAGEMENT SIGNALING FUNCTION). "**BLANK SCREEN**" ALLOWS THE BIOS TO BLANK SCREEN DISPLAY BY TURNING OFF THE RED-GREEN-BLUE SIGNALS.

**MODEM USE IRQ:**

WHEN THE SYSTEM IS IN GREEN FUNCTION, MODEM WAKES UP THE SYSTEM THROUGH IRQ.

**HDD POWER DOWN:**

SELECTING "**DISABLED**" WILL TURN OFF THE HARD DISK DRIVE (HDD) MOTOR. SELECTING "**1MIN ...15MIN**" ALLOWS YOU TO DEFINE THE HDD IDLE TIME BEFORE THE HDD ENTERS POWER SAVING MODE. THE OPTION "**WHEN SUSPEND**" LETS THE BIOS TURN THE HDD MOTOR OFF WHEN THE SYSTEM IS IN SUSPEND MODE. THE OPTIONS "**1MIN ... 15MIN**" AND "**WHEN SUSPEND**" WILL NOT WORK CONCURRENTLY. WHEN HDD IS IN POWER SAVING MODE, ANY ACCESS TO THE HDD WILL WAKE THE HDD UP.

**DOZE MODE:**

WHEN DISABLED, THE SYSTEM WILL NOT ENTER DOZE MODE. THE SPECIFIED TIME OPTION DEFINE THE IDLE TIME THE SYSTEM TAKES BEFORE IT ENTERS DOZE MODE.

**SUSPEND MODE:**

WHEN DISABLED, THE SYSTEM WILL NOT ENTER SUSPEND MODE. THE SPECIFIED TIME OPTION DEFINES THE IDLE TIME THE SYSTEM TAKES BEFORE IT ENTERS SUSPEND MODE.

**VGA:**

SELECTING "ON" WILL ENABLE THE POWER MANAGEMENT TIMERS WHEN A "NO ACTIVITY" EVENTS IS DETECTED IN THE VGA. SELECTING "OFF" TO DISABLE THE PM TIMER EVEN IF A "NO ACTIVITY" EVENT IS DETECTED.

**LPT & COM:**

SELECTING "**LPT & COM**" WILL ENABLE THE POWER MANAGEMENT TIMERS WHEN A "NO ACTIVITY" EVENT IS DETECTED IN THE LPT AND COM PORTS. SELECTING "**LPT**" ("**COM**") WILL ENABLE THE POWER MANAGEMENT TIMERS WHEN A "NO ACTIVITY" EVENT IS DETECTED IN THE LPT (COM) PORTS. SELECTING "**NONE**" TO DISABLE THE PM TIMER EVEN IF A "NO ACTIVITY" EVENT IS DETECTED.

**HDD & FDD:**

SELECTING "ON" WILL ENABLE THE POWER MANAGEMENT TIMERS WHEN A "NO ACTIVITY" EVENT IS DETECTED IN THE HARD DISK DRIVE AND FLOPPY DISK DRIVE. SELECTING "OFF" TO DISABLE THE PM TIMER EVENT IF A "NO ACTIVITY" EVENT IS DETECTED.

**DMA/MASTER:**

WHEN THE MASTER IS WORKING, THE SYSTEM WILL NOT HAVE SMI SIGNAL UNTIL THE MASTER IS FINISHED.

**PRIMARY INTR:**

WHEN ENABLED, YOU CAN CHOOSE ANY IRQ#.

**IRQ#:**

WHEN SET AT "**PRIMARY**" THE PROCESSOR WILL POWER DOWN ONLY AFTER THE BIOS DETECTS A "NO IRQ ACTIVITY" DURING

THE TIME SPECIFIED BY THE SUSPEND TIME. IF SET AT "SECONDARY EVENT"

THE SYSTEM WILL DISTINGUISH WHETHER AN INTERRUPT ACCESSES AN I/O ADDRESS OR NOT. IF IT DOES, THE SYSTEM ENTERS THE STANDBY MODE. IF NOT, THE SYSTEM ENTERS THE DREAMING MODE; THAT IS THE SYSTEM GOES BACK FULL-ON STATUS BUT LEAVES THE MONITOR BLANK. FOR INSTANCE, IF THE SYSTEM CONNECTS TO A LAN AND RECEIVES AN INTERRUPT FROM ITS FILE SERVER, THE SYSTEM WILL ENTER THE DREAMING MODE TO EXECUTE THE CORRESPONDING CALLING ROUTINE.

### 3-5 PNP/PCI CONFIGURATION

## ROM PCI/ISA BIOS PNP/PCI CONFIUGURATION

AWARD SOFTWARE. INC.

PNP OS Installed	: No	CPU to PCI Write Buffer	: Enabled
Resources Controlled By	: Auto	PCI Dynamic Bursting	: Enabled
Resources Configuration Data	: Disabled	PCI Master 0 WS WrIte	: Enabled
ACPI I/O Device Mode	: Enabled	PCI Delay Transaction	: Enabled
		PCI Master Read Prefetch	: Enabled
		PCI #2 Access #1 Retry	: Disabled
		AGP Master 1 WS Write	: Enabled
		AGP Master 1 WS Read	: Disabled
		PCI IRQ Actived By	: Level
		Assign IRQ For USB	: Disabled
		Assign IRQ For VGA	: 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 6

#### PCI IRQ ACTIVED BY:

IF YOUR IDE CARDS IS TRIGGERED BY EDGE, SET IT AT "EDGE". THE OPTIONS ARE: LEVEL (DEFAULT), EDGE,.

#### CPU TO PCI WRITE BUFFER:

**YOUR BEST CHOICE**  
 WHEN ENABLED, IT ALLOWS DATA AND ADDRESS ACCESS TO THE INTERNAL BUFFER OF 82C586B, SO THE PROCESSOR CAN BE RELEASED FROM THE WAITING STATE. THE OPTIONS ARE: ENABLED (DEFAULT), DISABLED.

**PCI DYNAMIC BURSTING:**

WHEN ENABLED, THE PCI CONTROLLER ALLOWS BURSTING PCI TO TRANSFER IF THE CONSECUTIVE PCI CYCLES COME WITH THE ADDRESS FALLING IN THE SAME 1KB SPACE. THIS IMPROVES THE PCI BUS THROUGH-PUT. THE OPTIONS ARE: ENABLED (DEFAULT), DISABLED.

**ASSIGN IRQ FOR USB & ASSIGN IRQ FOR VGA**

DEFAULT VALUE FOR “ASSIGN IRQ FOR USB” IS DISABLE AND “ASSIGN IRQ FOR VGA” ENABLE. FOR VGA CARDS OF GOOD QUALITY, IRQ ADDRESS IS REQUIRED, BUT FOR SOME LOW-END VGA CARDS, NO IRQ IS NEEDED. THEREFORE, PLEASE CONSIDER **VGA CARD’S FEATURE BEFORE** SETTING “**ASSIGN IRQ FOR USB**” AND “**ASSIGN IRQ FOR VGA.**”

**3-6 LOAD SETUP DEFAULTS**

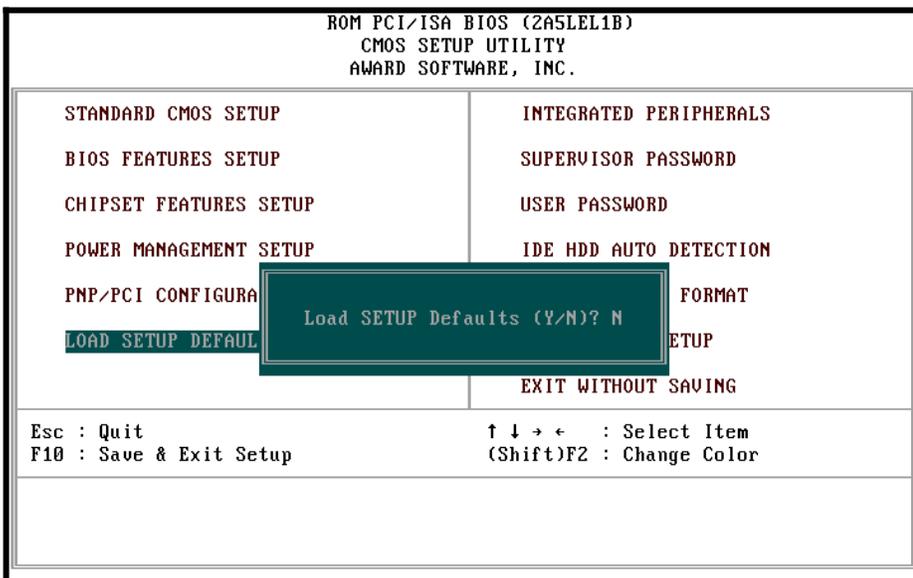


FIGURE 7

SELECTING THIS FIELD LOADS THE FACTORY DEFAULTS FOR BIOS AND CHIPSET FEATURES WHICH THE SYSTEM AUTOMATICALLY DETECTS.

**3-7 INTEGRATED PERIPHERALS**

**ROM PCI/ISA BIOS  
INTEGRATED PERIPHERALS**

AWARD SOFTWARE, INC.

On-Chip IDE First Channel	: Enabled	Onboard Parallel Port	: 378/IRQ7
On-Chip IDE Second Channel	: Enabled	Parallel Port Mode	: SPD
IDE Prefetch Mode	: Enabled		
IDE HDD Block Mode	: Enabled		
IDE Primary Master PIO	: Auto		
IDE Primary Slave PIO	: Auto		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
Init Display First	: PCI Slot	ESC : Quit	↑↓→← : Select Item
Onboard FDC Controller	: Enabled	F1 : Help	PU/PD/+/- : Modify
Onboard Serial Port 1	: 3F8/IRQ4	F5 : Old Values	(Shift) F2 : Color
Onboard Serial Port 2	: 2F8/IRQ3	F6 : Load BIOS Defaults	
IR Address Select	: Disabled	F7 : Load Setup Defaults	

FIGURE 8

**ONCHIP IDE FIRST CHANNEL:**

WHEN ENABLED, IT ALLOWS THE IDE DRIVER TO USE THE FIRST CHANNEL OF THE PRIMARY IDE.

**ONCHIP IDE SECOND CHANNEL:**

WHEN ENABLED, IT ALLOWS THE IDE DRIVE TO USE THE SECOND CHANNEL OF THE PRIMARY IDE.

**IDE PRIMARY SLAVE PIO:**

THE DEFAULT VALUE IS AUTO.

**AUTO:** BIOS WILL AUTOMATICALLY DETECT THE ONBOARD PRIMARY

SLAVE PCI IDE HDD ACCESSING MODE.7

**MODE 0-4 :** MANUALLY SET THE IDE ACCESSING MODE.

**IDE SECONDARY MASTER PIO:**

THE DEFAULT VALUE IS AUTO.

**AUTO :** BIOS WILL AUTOMATICALLY DETECT THE ONBOARD SECONDARY MASTER PCI IDE HDD ACCESSING MODE.

**MODE 0-4 :** MANUALLY SETS THE IDE ACCESSING MODE.

**IDE PRIMARY MASTER PIO:**

THE DEFAULT VALUE IS AUTO.

**IDE SECONDARY SLAVE PIO:**

THE DEFAULT VALUE IS AUTO.

**ONBOARD FDC CONTROLLER:**

THE DEFAULT VALUE IS ENABLED.

ENABLED : ENABLED THE ONBOARD I/O CHIP'S FLOPPY DRIVE INTERFACE CONTROLLER. DISABLED : DISABLED THE ONBOARD I/O CHIP'S FLOPPY DRIVE INTERFACE CONTROLLER. WHEN USE ON-CARD ISA FDC'S CONTROLLER.

**ONBOARD SERIAL PORT 1:**

THE FIELD ALLOWS THE USER TO SELECT THE SERIAL PORT. THE DEFAULT VALUE IS AUTO.

COM1: ENABLE ONBOARD SERIAL PORT1 AND ADDRESS IS COM1/3F8H

COM2: ENABLE ONBOARD SERIAL PORT1 AND ADDRESS IS COM2/2F8H

COM3: ENABLE ONBOARD SERIAL PORT1 AND ADDRESS IS COM3/3E8H

COM4: ENABLE ONBOARD SERIAL PORT1 AND ADDRESS IS COM4/2E8H

DISABLED: DISABLE ONBOARD I/O CHIP'S SERIAL PORT 1.

**AUTO** : BIOS WILL AUTOMATICALLY DETECT THE ONBOARD SERIAL PORT.

**ONBOARD SERIAL PORT 2:**

THE FIELD ALLOWS THE USER TO SELECT THE SERIAL PORT. THE DEFAULT VALUE IS 2F8/IRQ3.

**COM1**: ENABLE ONBOARD SERIAL PORT1 AND ADDRESS IS COM1/3F8H

**COM2**: ENABLE ONBOARD SERIAL PORT1 AND ADDRESS IS COM2/2F8H

**COM3**: ENABLE ONBOARD SERIAL PORT1 AND ADDRESS IS COM3/3E8H

**COM4**: ENABLE ONBOARD SERIAL PORT1 AND ADDRESS IS COM4/2E8H

DISABLED: DISABLE ONBOARD I/O CHIP'S SERIAL PORT 1.

**AUTO** : BIOS WILL AUTOMATICALLY DETECT THE ONBOARD SERIAL PORT.

**ONBOARD PARALLEL PORT:**

THE FIELD ALLOWS THE USER TO SELECT THE LPT PORT. THE DEFAULT VALUE IS 378H/IRQ7.

**378H** : ENABLE ONBOARD LPT PORT AND ADDRESS IS 378H AND IRQ7

**278H** : ENABLE ONBOARD LPT PORT AND ADDRESS IS 278H AND IRQ5

**3BCH** : ENABLE ONBOARD LPT PORT AND ADDRESS IS 3BCH AND IRQ7

DISABLED : DISABLE ONBOARD I/O CHIP'S LPT PORT

### 3-8 SUPERVISOR PASSWORD

1. IF CMOS IS CORRUPTED OR THE OPTION IS NOT USED, A DEFAULT PASSWORD STORED IN THE ROM WILL BE USED. THE SCREEN WILL DISPLAY THE FOLLOWING MESSAGE:

**ENTER PASSWORD  
PRESS THE [ENTER] KEY TO CONTINUE  
AFTER PROPER PASSWORD IS GIVEN.**

2. IF CMOS IS CORRUPTED OR THE OPTION IS USED EARLIER, BUT THE USER WISHES TO CHANGE DEFAULT PASSWORD, THE SETUP UTILITY WILL DISPLAY A MESSAGE AND ASK FOR A CONFIRMATION.

**CONFIRM PASSWORD:**

3. AFTER PRESSING THE [ENTER] KEY (ROM PASSWORD IF THE OPTION WAS NOT USED) OR CURRENT PASSWORD (USER-DEFINED PASSWORD), THE USER CAN CHANGE THE PASSWORD AND STORE NEW ONE IN CMOS RAM. A MAXIMUM OF 8 CHARACTERS CAN BE ENTERED.

### 3-9 IDE HDD AUTO DETECTION

THE "IDE HDD AUTO DETECTION" UTILITY IS A VERY USEFUL TOOL ESPECIALLY WHEN YOU DO NOT KNOW WHICH KIND OF HARD DISK TYPE YOU ARE USING. YOU CAN USE THIS UTILITY TO DETECT THE CORRECT DISK TYPE INSTALLED IN THE SYSTEM AUTOMATICALLY. YET, NOW YOU CAN SET HARD DISK TYPE TO AUTO IN THE STANDARD CMOS SETUP. YOU DON'T NEED THE "IDE HDD AUTO DETECTION" UTILITY. THE BIOS WILL AUTO-DETECT THE HARD DISK SIZE AND MODEL ON DISPLAY DURING POST.

ROM PCI/ISA BIOS CMOS SETUP UTILITY AWARD SOFTWARE, INC.						
HARD DISK TYPE	SIZE	CYLS	HEADS	PRECOMP	LANDZONE	SECTORS
MODE						
PRIMARY MASTER	343	665	16	65535	664	63
NORMAL						
PRIMARY SLAVE						
SECONDARY MASTER						
SECONDARY SLAVE__						

**NOTE: HDD MODES:**

THE AWARD BIOS SUPPORTS 3 HDD MODES: NORMAL, LBA&LARGE.

**NORMAL MODE:**

GENERIC ACCESS MODE EITHER IN BIOS OR IDE CONTROLLER WILL MAKE ANY TRANSFORMATION DURING ACCESSING. THE MAXIMUM NUMBER OF CYLINDERS, HEAD & SECTORS FOR NORMAL MODE ARE 1024, 16 & 63.

NO.CYLINDER (1024)  
X NO.HEAD (16)  
X NO.SECTOR (63)  
X NO.PER SECTOR (512)

-----  
528 MEGABYTES

IF USER SETS IN NORMAL MODE, THE MAXIMUM ACCESSIBLE HDD SIZE WILL BE 528 MEGABYTE EVEN THOUGH ITS PHYSICAL SIZE MAY BE GREATER THAN THAT !

**LBA (LOGICAL BLOCK ADDRESSING) MODE:**

A NEW HDD ACCESSING METHOD TO OVERCOME THE 528 MEGABYTE BOTTLENECK. THE NUMBER OF CYLINDERS, HEAD & SECTORS SHOWN IN SETUP MAY NOT BE THE NUMBER PHYSICALLY CONTAINED IN THE HDD. DURING HDD ACCESSING, THE IDE CONTROLLER WILL TRANSFORM THE LOGIC ADDRESS DESCRIBED BY SECTOR, HEAD & CYLINDER INTO ITS OWN PHYSICAL ADDRESS INSIDE THE HDD. THE MAXIMUM HDD SIZE SUPPORTED BY LBA MODE IS 8.4 GIGABYTES WHICH IS OBTAINED BY THE FOLLOWING FORMULA:

NO.CYLINDER (1024)  
X NO.HEAD (255)  
X NO.SECTOR (63)  
X BYTES.PER SECTOR (512)

-----  
8.4 GIGABYTES

**LARGE MODE:**

EXTENDED HDD ACCESS MODE SUPPORTED BY AWARD SOFTWARE. SOME IDE HDDS CONTAIN MORE THAN 1024 CYLINDER WITHOUT LBA SUPPORT (IN SOME CASES, USER DOES NOT WANT LBA). THE AWARD BIOS PROVIDES ANOTHER ALTERNATIVE TO SUPPORT THESE KINDS OF LARGE MODE:

<b>CYLS.</b>	<b>HEADS</b>	<b>SECTOR</b>	<b>MODE</b>
1120	16	59	NORMAL
560	32	59	LARGE

BIOS TRICKS DOS (OR OTHER OS) THAT THE NUMBER OF CYLINDERS IS LESS THAN 1024 BY DIVIDING IT INTO 2. AT THE SAME TIME, THE NUMBER OF HEADS IS MULTIPLIED BY 2. AVERSE TRANSFORMATION PROCESS WILL BE MADE INSIDE INT 12H IN ORDER TO ACCESS THE RIGHT HDD ADDRESS THE RIGHT HDD ADDRESS !

NO.CYLINDER (1024)  
 X NO.HEAD (32)  
 X NO.SECTOR (63)  
 X BYTES.PER SECTOR (512)

-----  
 1 GIGABYTES

**NOTE:**

**TO SUPPORT LBA OR LARGE MODE OF HDDS, THERE MUST BE SOME SOFTWARES INVOLVED. ALL THESE SOFTWARES ARE LOCATED IN THE AWARD HDD SERVICE ROUTINE (INT 13H). IT MAY FAIL TO ACCESS A HDD WITH LBA (LARGE) MODE SELECTED IF YOU ARE RUNNING UNDER A OPERATIONAL SYSTEM WHICH REPLACES THE WHOLE INT 13H. UNIX OPERATIONL SYSTEMS DO NOT SUPPORT EITHER OR LARGE AND MUST UTILIZE THE STANDARD MODE. UNIX CAN SUPPORT DRIVES LARGER THAN 528MB.**

### 3-10 SAVE & EXIT SETUP

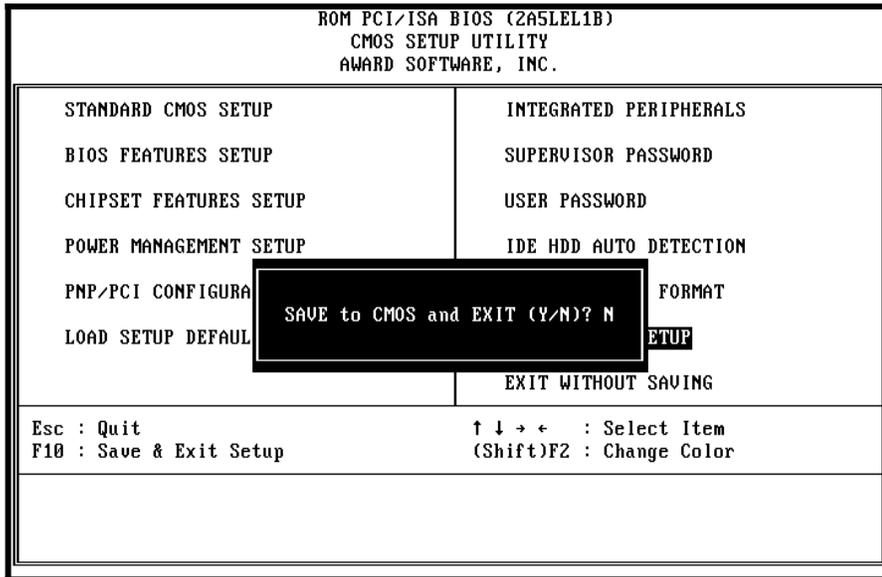
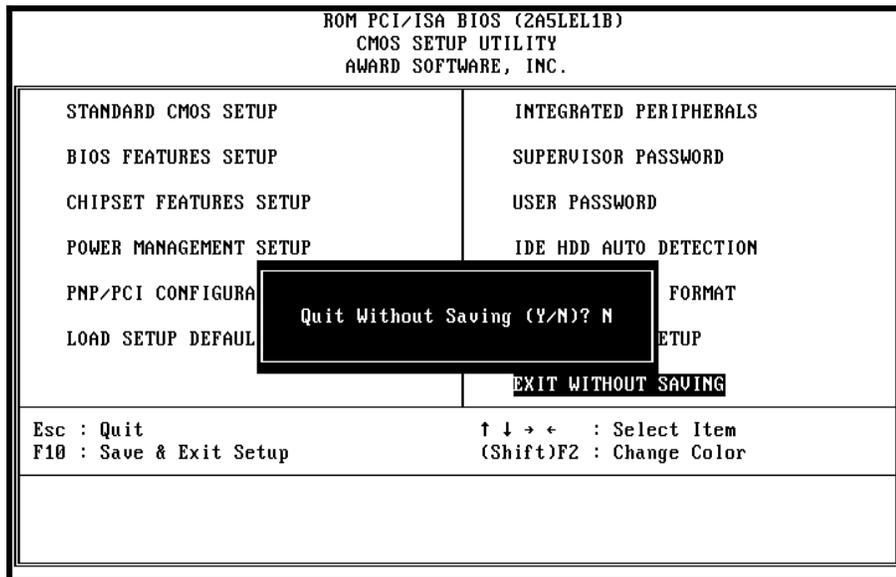


FIGURE 9

AFTER YOU HAVE MADE CHANGES UNDER SETUP, PRESS <ESC> TO RETURN TO THE MAIN MENU. MOVE CURSOR TO “SAVE AND EXIT SETUP,” OR PRESS “F10” AND THEN PRESS “Y” TO CHANGE THE CMOS SETUP. IF YOU DO NOT CHANGE ANYTHING, PRESS <ESC> AGAIN OR MOVE CURSOR TO “EXIT WITHOUT SAVING” AND PRESS “Y” TO RETAIN THE SETUP SETTINGS. THE FOLLOWING MESSAGE WILL APPEAR AT THE CENTER OF THE SCREEN TO ALLOW YOU TO SAVE DATA TO CMOS AND EXIT THE SETUP UTILITY.

**SAVE TO CMOS AND EXIT (Y/N)?**

### 3-11 QUIT WITHOUT SAVING



**FIGURE 10**

THE "**EXIT WITHOUT SAVING**" OPTION WILL BRING YOU BACK TO NORMAL BOOT UP PROCEDURE WITHOUT SAVING ANY INTO CMOS RAM. ALL OF THE OLD DATA IN THE CMOS WILL NOT BE DESTROYED. IF YOU SELECT THIS FEATURE, THE FOLLOWING MESSAGE WILL APPEAR AT THE CENTER OF THE SCREEN TO ALLOW YOU TO EXIT THE SETUP UTILITY WITHOUT SAVING CMOS MODIFICATIONS:

**QUIT WITHOUT SAVING(Y/N)?**

### 3-12 I/O & MEMORY MAP

#### MEMORY MAP

ADDRESS RANGE	SIZE	DESCRIPTION
00000-7FFFF	512K	CONVENTIONAL MEMORY
80000-9FBFF	127K	EXTENDED CONVENTIONAL MEMORY
9FC00-9FFFF	1K	EXTENDED BIOS DATA AREA IF PS/2 MOUSE IS INSTALLED
A0000-C7FFF	160K	AVAILABLE FOR HI DOS MEMORY
C8000-DFFFF	96K	AVAILABLE FOR HI DOS MEMORY AND ADAPTER ROMS
E0000-EEFFF	60K	AVAILABLE FOR UMB
EF000-EFFFF	4K	VIDEO SERVICE ROUTINE FOR MONOCHROME & CGA ADAPTER
F0000-F7FFF	32K	BIOS CMOS SETUP UTILITY
F8000-FCFFF	20K	BIOS RUNTIME SERVICE ROUTINE (2)
FD000-FDFFF	4K	PLUG AND PLAY ESCD DATA AREA
FE000-FFFFF	8K	BIOS RUNTIME SERVICE ROUTINE (1)

**I/O MAP**

000-01F	DMA CONTROLLER (MASTER)
020-021	INTERRUPT CONTROLLER (MASTER)
022-023	CHIPSET CONTROL REGISTERS. I/O POSTS
040-05F	TIMER CONTROL REGISTERS
060-06F	KEYBOARD INTERFACE CONTROLLER (8042)
070- 07F	RTC PORTS & CMOS I/O PORTS
080-09F	DMA REGISTER
0A0-0BF	INTERRUPT CONTROLLER (SLAVE)
0C0-0DF	DMA CONTROLLER (SLAVE)
0F0-0FF	MATH COPROCESSOR
1F0-1FB	HARD DISK CONTROLLER
278-27F	PARALLEL PORT 2
2B0-2DF	GRAPHICS ADAPTER CONTROLLER
2F8-2FF	SERIAL PORT 2
360-36F	NETWORK PORTS
378-37F	PARALLEL PORT 1
3B0-3BF	MONOCHROME & PARALLEL PORT ADAPTER
3C0-3CF	EGA ADAPTER
3D0-CDF	CGA ADAPTER
3F0-3F7	FLOPPY DISK CONTROLLER
3F8-3FF	SERIAL PORT-1

### 3-13 TIME & DMA CHANNELS MAP

#### **TIME MAP:**

TIMER CHANNEL 0 SYSTEM TIMER INTERRUPT  
TIMER CHANNEL 1 DRAM REFRESH REQUEST  
TIMER CHANNEL 2 SPEAKER TONE GENERATOR

#### **DMA CHANNELS:**

DMA CHANNEL 0 AVAILABLE  
DMA CHANNEL 1 ONBOARD ECP (OPTION)  
DMA CHANNEL 2 FLOPPY DISK (SMC CHIP)  
DMA CHANNEL 3 ONBOARD ECP (DEFAULT)  
DMA CHANNEL 4 CASCADE FOR DMA CONTROLLER 1  
DMA CHANNEL 5 AVAILABLE  
DMA CHANNEL 6 AVAILABLE  
DMA CHANNEL 7 AVAILABLE

### 3-14 INTERRUPT MAP

**NIMI:** NON-MASKABLE INTERRUPT

**IRQ(H/W):** 0 SYSTEM TIMER INTERRUPT FROM TIMER 0

1 KEYBOARD OUTPUT BUFFER FULL  
2 CASCADE FOR IRQ8-15  
3 SERIAL PORT2  
4 SERIAL PORT1  
5 PARALLEL PORT 2  
6 FLOPPY DISK (SMC CHIP)  
7 PARALLEL PORT 1  
8 RTC CLOCK  
9 AVAILABLE  
10 AVAILABLE  
11 AVAILABLE  
12 PS/2 MOUSE  
13 MATH COPROCESSOR  
14 ONBOARD HARD DISK (IDE1) CHANNEL  
15 ONBOARD HARD DISK (IDE2) CHANNEL

### 3-15 RTC & CMOS RAM MAP

RTC & CMOS:00    SECONDS

- 01    SECOND ALARM
- 02    MINUTES
- 03    MINUTES ALARM
- 04    HOURS
- 05    HOURS ALARM
- 06    DAY OF WEEK
- 07    DAY OF MONTH
- 08    MONTH
- 09    YEAR
- 0A    STATUS REGISTER A
- 0B    STATUS REGISTER B
- 0C    STATUS REGISTER C
- 0D    STATUS REGISTER D
- 0E    DIAGNOSTIC STATUS BYTE
- 0F    SHUTDOWN BYTE
- 10    FLOPPY DISK DRIVE TYPE BYTE
- 12    HARD DISK TYPE BYTE
- 13    RESERVE
- 14    EQUIPMENT TYPE
- 15    BASE MEMORY LOW BYTE
- 16    BASE MEMORY HIGH BYTE
- 17    EXTENSION MEMORY LOW BYTE
- 18    EXTENSION MEMORY HIGH BYTE
- 19-2D
- 2E-2F
  
- 30    RESERVED FOR EXTENSION MEMORY LOW  
      BYTE
- 31    RESERVED FOR EXTENSION MEMORY HIGH  
      BYTE
- 32    DATE CENTURY BYTE
- 33    INFORMATION FLAG
- 34-3F    RESERVE
- 40-7F    RESERVED FOR CHIPSET SETTING DATA

### 3.ES1869(ES1898) SOUND DRIVER INSTALL for Win31:

The pathname for the execution file is a:\Win31\Setup.exe  
Installation

- =====
- Step 1.)Start windows.
  - Step 2.)Insert the ES1869 (ES1898) Sound Driver in a floppy drive.
  - Step 3.)In the Run dialog box, Type a:\Win31\Setup.exe

### for Win95:

The pathname for the execution file is A:\Win95\Oemsetup.INF  
Installation

- =====
- Step 1.)Start windows and continue until the system detects a new hardware
  - Step 2.)Once the windows finds a new hardware (ES1869), The New Hardware found dialog box is displayed.
  - Step 3.)Select Driver from disk provided by hardware manufacturer then click OK.
  - Step 4.)Insert The windows utility drivers disk into the driver A, Type A:\Win95\Oemsetup.INF and then click OK.
- P.S: If your ESS1869 (ES1898) Sound plug, and play can work smoothly in Win95, Follow:  
example:  
\*Under Win95. My Computer. Control Panel. Device Manager.  
View Device by Type

Other Device  
! ES1869 control control interface  
! ES1869 Plug and play audio driver

-----  
Please, REMOVE "!" Other Device, After go to Installation  
Step1,2,3,4.

### for Win98:

The pathname for the execution file is A:\Win98\Oemsetup.INF  
Installation

- =====
- Step 1.)Start windows and continue until the system detects a new hardware
  - Step 2.)Once the windows finds a new hardware (ES1869), The New Hardware found dialog box is displayed.
  - Step 3.)Select Driver from disk provided by hardware manufacturer then click OK.
  - Step 4.)Insert The windows utility drivers disk into the driver A, Type A:\Win98\Oemsetup.INF and then click OK.

P.S: If your ESS1869 (ES1898) Sound plug, and play can work smoothly in Win98, you won't be necessary to install the drivers.

### for Win\_NT:

The pathname for the execution file is A:\Winnt\Oemsetup.inf  
Installation

- =====
- Step 1.)Start WIN\_NT.
  - Step 2.)Insert the ES1869 (ES1898) Sound Driver in a floppy drive.
  - Step 3.)Double click the system icon in the control panel use the "Multimedia" icon
  - Step 4.)Select "device" label, than choice the audio devices to "ADD" Function
  - Step 5.)Insert the ESS DRIVER DISK in a floppy drive, The pathname for the execution file is A:\Winnt\Oemsetup.inf

#### OTHER:

- 1,ESS1869----→For ISA Sound Card Design Market
- 2,ESS1898----→Cost-reduced version of ES1869 for sound card market.
- 3,ESS 1869 and ESS1898 Audio driver full compatibility.

