



## **NOTICE TO END USER**

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This User's Guide & Technical Reference is for assisting system manufacturers and end-users in setting up and installing the mainboard.

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# Chapter 1: Introduction

## 1-1 CPU

- Supports Intel Celeron / Pentium II / Pentium !!! CPUs using SLOT-1 at 233MHz up to 1GHz or higher.
- Supports CPU voltage auto-detect circuit.
- Supports 66 / 100 / 103 / 112MHz Bus Clock with auto-detect. (BIOS provides 75 / 83 / 103 / 112 / 133 / 150MHz Bus Clock without auto-detect)

## 1-2 CHIPSET

- VIA VT82C693A + VT82C86A with 133MHz FSB.
- PCI Rev 2.1, 5V, 33MHz interface compliant.
- Supports 66 / 100 / 133MHz, 3.3V AGP (Accelerated Graphics Port) slot.

## 1-3 L2 CACHE

- Pentium II / Pentium !!! supports 512K write back cache with Pipelined Burst SRAMs.

## 1-4 MAIN MEMORY

- Memory range from 8MB up to 768MB (SDRAM) with DRAM Table Free configuration.
- Supports SDRAM with 12 / 10 / 8 / 6 ns speed.
- Supports 3pcs 168pin DIMM sockets. (3.3V Unbuffered and 4 clock type)
- DRAM supports ECC or Parity function.

## 1-5 BIOS

- Award Plug and Play BIOS.
- Supports ACPI and legacy APM.
- Flash Memory for easy upgrade.

## 1-6 SUPER I/O FUNCTION

- Integrated USB (Universal Serial Bus) controller with 2 USB ports.
- Supports 2 IDE channels with 4 IDE devices. (including ZIP / LS-120 devices)
- Provides PCI IDE Bus Master function and supports Ultra DMA33 / 66 function.
- Provides 1 floppy port.
- 2 high speed 16550A FIFO UART ports.

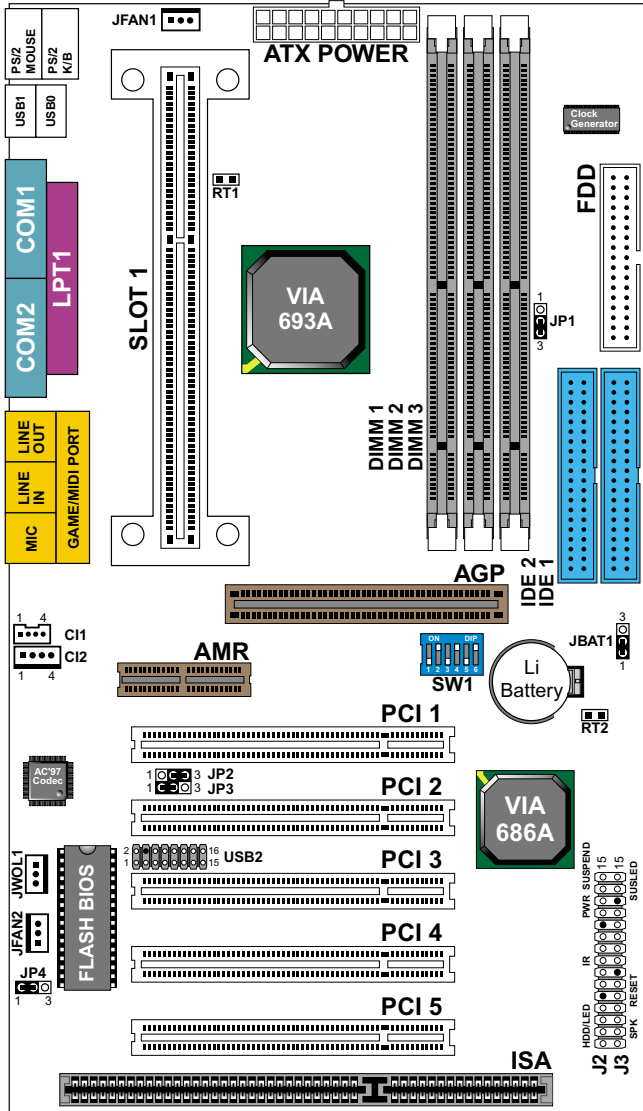
- 1 parallel port with EPP / ECP / SPP capabilities.
- PS/2 mouse connector.
- Built-In RTC, CMOS, keyboard controller on single I/O chip.
- Peripherals boot function. (with ATX power)

## **1-7 OTHER FEATURES**

- ATX size 17.0cm x 30.5cm.
- 5 PCI Master slots, 2 ISA slots and 1 AGP slot.
- Provides DIP switch setting.
- Supports 66 / 100 / 133MHz Bus Clock.
- Supports keyboard power on function.
- Supports WOL (Wake On LAN) function.
- BIOS supports 103 / 112 / 133 / 150MHz Bus Clock.

## 1-8 MOTHERBOARD LAYOUT

- DEFAULT SETTING: Celeron 300/66MHz, Pentium II / Pentium III! 450/100MHz.



**NOTE: FOR 100 / 133MHz CPU ENVIRONMENT, THE SDRAM MUST COMPLY WITH PC-100 / PC-133 SPEC.**

# Chapter 2: Hardware Setup



## 2-1 CPU TYPE CONFIGURATION



Manual DIP switches for diverse CPUs	
<p>ON</p> <p>1 2 3 4 5 6</p>	<p>Celeron 233/66 (66MHz * 3.5x) Pentium II 350/100 (100MHz * 3.5x)</p>
<p>ON</p> <p>1 2 3 4 5 6</p>	<p>Celeron 266/66 (66MHz * 4.0x) Pentium II 400/100 (100MHz * 4.0x) Pentium III 533B/133 (133MHz * 4.0x) Pentium III 533EB/133 (133MHz * 4.0x)</p>
<p>ON</p> <p>1 2 3 4 5 6</p>	<p>Celeron 300/66 (66MHz * 4.5x) Pentium II/III 450/100 (100MHz * 4.5x) Pentium III 600B/133 (133MHz * 4.5x) Pentium III 600EB/133 (133MHz * 4.5x)</p>
<p>ON</p> <p>1 2 3 4 5 6</p>	<p>Celeron 333/66 (66MHz * 5.0x) Pentium II/III 500/100 (100MHz * 5.0x) Pentium III 500E/100 (100MHz * 5.0x) Pentium III 667/133 (133MHz * 5.0x)</p>
<p>ON</p> <p>1 2 3 4 5 6</p>	<p>Celeron 366/66 (66MHz * 5.5x) Pentium II/III 550/100 (100MHz * 5.5x) Pentium III 550E/100 (100MHz * 5.5x) Pentium III 733/133 (133MHz * 5.5x)</p>
<p>ON</p> <p>1 2 3 4 5 6</p>	<p>Celeron 400/66 (66MHz * 6.0x) Pentium II/III 600/100 (100MHz * 6.0x) Pentium III 600E/100 (100MHz * 6.0x) Pentium III 800EB/133 (133MHz * 6.0x)</p>
<p>ON</p> <p>1 2 3 4 5 6</p>	<p>Celeron 433/66 (66MHz * 6.5x) Pentium II 650/100 (100MHz * 6.5x) Pentium III 650/100 (100MHz * 6.5x)</p>
<p>ON</p> <p>1 2 3 4 5 6</p>	<p>Celeron 466/66 (66MHz * 7.0x) Pentium III 700/100 (100MHz * 7.0x)</p>
<p>ON</p> <p>1 2 3 4 5 6</p>	<p>Celeron 500/66 (66MHz * 7.5x) Pentium III 750/100 (100MHz * 7.5x) Pentium III 1000B/133 (133MHz * 7.5x)</p>
<p>ON</p> <p>1 2 3 4 5 6</p>	<p>Celeron 533/66 (66MHz * 8.0x) Pentium III 800EB/133 (133MHz * 8.0x)</p>





## 2-2 SYSTEM MEMORY CONFIGURATION



- This VIA 693 Apollo Pro Plus motherboard supports 168pin DIMM of 4MB, 8MB, 16MB, 32MB, 64MB and 128MB to form a memory size between 8MB up to 768MB (SDRAM). VIA 693 Apollo Pro Plus chipset provides “Table-Free” function. It means that users can install DRAM with any configuration and in any bank, and that is why the DRAM table is not needed but do remember that the DRAM must be 3.3V type. **For 100 / 133MHz CPU environment, the SDRAM specification must comply with PC-100 / PC-133 spec.**

## 2-3 JUMPER SETTINGS

JFAN1 / JFAN2: ONBOARD FAN (12V)	
CPU FAN	JFAN1 
SYSTEM FAN	JFAN2 



JP1: BUS CLOCK SELECT	
Auto Detect 66MHz/100MHz/ 133MHz (default)	JP1 
133MHz	JP1 


JP2/JP3: ONBOARD AC'97 CODEC SELECT	
Disabled	JP2  JP3 
Enabled (default)	JP2  JP3 

JP4: POWER LOST RESUME	
Normal (default)	JP4 
Enabled	JP4 

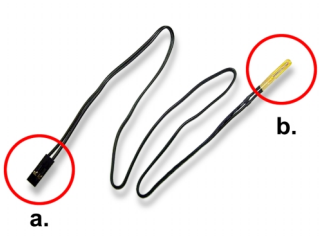
*This jumper allows you to use the switch of ATX power supply to control ON/OFF switch directly instead of using the power switch on the motherboard.*



<b>JBAT1: CLEAR CMOS DATA</b>	
Clear CMOS Data	<b>JBAT1</b> 
Retain Data (default)	<b>JBAT1</b> 

<b>JWOL1 : WAKE ON LAN (WOL) FUNCTION</b>	
Connect the Wake On LAN signal from LAN card to JWOL1	<b>JWOL1</b> 

*This feature requires that Wake-On-LAN features are enabled and that your system has an ATX power supply with at least 720mA / +5V standby power.*

<b>RT2: THERMAL SENSOR CONNECTOR</b>	
	<p>a: Connect to RT2.</p> <p>b: Connect this thermal sensor to particular device which generates lots of heat such as Hard Driver, VGA chip, etc.,. When connected, user could observe the temperature change from the BIOS program.</p>

### **CI1/CI2: CD-ROM Audio Connector**

PIN #	CI1	CI2
PIN 1	GND	Left Channel
PIN 2	Left Channel	GND
PIN 3	GND	GND
PIN 4	Right Channel	Right Channel

### **GAME/MIDI PORT**

### **MIC: MICROPHONE JACK**

### **LINE IN: AUDIO INJACK**

### **LINE OUT/SPEAKER OUT: AUDIO OUT JACK**

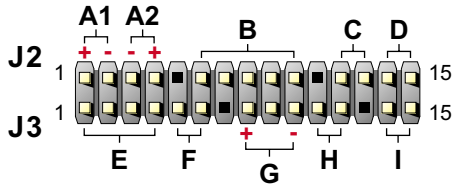
**BUS RATIO SELECT**

SW1 DIP1 ~ DIP4 SETTING					
3.0x	ON		3.5x	ON	
	ON			ON	
4.0x	ON		4.5x	ON	
	ON			ON	
5.0x	ON		5.5x	ON	
	ON			ON	
6.0x	ON		6.5x	ON	
	ON			ON	
7.0x	ON		7.5x	ON	
	ON			ON	
8.0x	ON				
	ON				

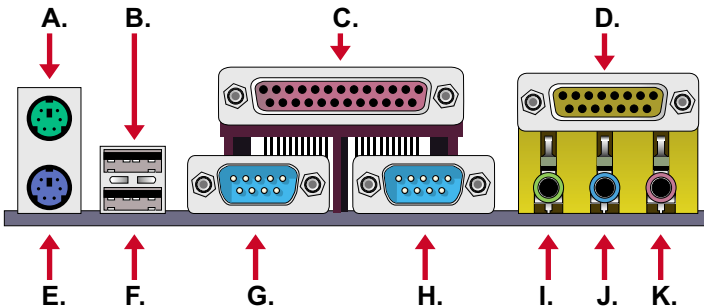
**BUS CLOCK SELECT**

SW1 DIP5 ~ DIP6 SETTING			
ON		66MHz	JP1
ON		100MHz	JP1
ON		66/100/133MHz Auto Select (default)	JP1
ON		133MHz	JP1

## 2-4 CONNECTORS



- A1 : 1st HDD LED
- A2 : 2nd HDD LED
- B : INFRARED (IR)
- C : POWER SWITCH
- D : SUSPEND CONNECTOR
- E : SPEAKER
- F : RESET SWITCH
- G : POWER LED
- H : NONE
- I : SUSPEND LED



- A : PS/2 MOUSE
- B : USB 0
- C : LPT 1
- D : GAME/MIDI PORT
- E : PS/2 KEYBOARD
- F : USB 1
- G : COM 1
- H : COM 2
- I : SPEAKER OUT / LINE OUT
- J : LINE IN
- K : MIC

## 2-4.1 J2 SWITCH SIGNAL SUMMARY

J2	Pin	Signal Description
HDD LED Connector	1	+5V
	2	HDD LED Signal
	3	HDD LED Signal
	4	+5V
N.C.	5	Empty
Infrared Connector	6	Infrared Transmit Signal
	7	GND
	8	Infrared Receive Signal (Low Speed)
	9	Infrared Receive Signal (High Speed)
	10	+5V
N.C.	11	Empty
Power Switch	12	GND
	13	Power Switch for ATX
Suspend Connector	14	GND
	15	Suspend Signal

### HDD INDICATOR LED (PIN1 ~ PIN4)

- This connector connects with the hard disk indicator LED on the case.

### INFRARED PORT MODULE CONNECTOR (PIN6 ~ PIN10)

- The system board provides a 5-pin infrared connector for an optional wireless transmitting and receiving module. Pin 6 through pin 10 are Transmit, GND, Receive (low speed), Receive (high speed) and Vcc, respectively.

### POWER SWITCH (PIN12 ~ PIN13)

- Toggle pin 12 and pin 13 for turning ON/OFF of the power supply. (For ATX power only)

### SUSPEND CONNECTOR (PIN14 ~ PIN15)

- This allows user to manually place the system into a suspend mode or "Green" mode, where system activity is decreased to save electricity and expand the life of certain components when the system is not in use. This

2-pin connector connects to the case-mounted suspend switch. If you do not have a switch for the connector, you may use the "Turbo Switch". SMI is activated when it detects a short to open moment and therefore leaving it shorted will not cause any problems. This may require one or two presses depending on the position of the switch. Wake-Up can be controlled by setting in the BIOS but the keyboard will always allow wake-up (The SMI lead can not wake up the system). (The BIOS Power Management setting must be **ENABLED**)

## 2-4.2 J3 SWITCH SIGNAL SUMMARY

J3	Pin	Signal Description
Speaker	1	Speaker Signal
	2	Empty
	3	GND
	4	+5V
Reset Switch	5	Reset Signal
	6	GND
N.C.	7	Empty
Power LED Connector	8	+5V
	9	Empty
	10	GND
N.C.	11	Empty
	12	Empty
N.C.	13	Empty
Suspend LED Connector	14	Suspend LED
	15	GND

### SPEAKER CONNECTOR (PIN1 ~ PIN4)

- The speaker is a 4-pin connector to connect with the system and the speaker.

### RESET SWITCH (PIN5 ~ PIN6)

- The system board has a 2-pin connector for rebooting your computer without having to turn off the power switch. This prolongs the life of the system's power supply.

### POWER LED (PIN8 ~ PIN10)

- Connect this 3-pin connector to power LED indicator.

### SUSPEND LED (PIN14 ~ PIN15)

- Connect to Suspend LED.

## Chapter 3: BIOS Setup

- This 693 Apollo Pro Plus motherboard comes with the AWARD BIOS from AWARD Software Inc. Enter the Award BIOS program Main Menu by:

- Turn on or reboot your system. After a series of diagnostic checks, the following message will appear:

**PRESS <DEL> TO ENTER SETUP**

- Press the <DEL> key and the main program screen will appear as follows.

ROM PCI / ISA BIOS (2A6LGSNC)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	CPU SPEED SETTING
BIOS FEATURES SETUP	INTEGRATED PERIPHERALS
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP/PCI CONFIGURATION	IDE HDD AUTO DETECTION
LOAD SETUP DEFAULTS	SAVE & EXIT SETUP
	EXIT WITHOUT SAVING
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Time, Date, Hard Disk Type...	

- Using the arrows on your keyboard, select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
- You may return to the Main Menu anytime by pressing <ESC>.
- In the Main Menu, "SAVE AND EXIT SETUP" saves your changes and reboots the system, and "EXIT WITHOUT SAVING" ignores your changes and exits the program.

### 3-1 STANDARD CMOS SETUP

- Standard CMOS Setup allows you to record some basic system hardware configuration and set the system clock and error handling. You only need to modify the configuration values of this option when you change your system hardware configuration or the configuration stored in the CMOS memory gets lost or damaged.

Run the STANDARD CMOS SETUP as following:

1. Choose "STAND CMOS SETUP" from the Main Menu and a screen with a list of option will appear:

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

Date (mm:dd:yy) : Tue, Oct 19 1999																	
Time (hh:mm:ss) : 15: 15: 20																	
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR MODE										
Primary Master	: Auto	0M	0	0	0	0	0 AUTO										
Primary Slave	: Auto	0M	0	0	0	0	0 AUTO										
Secondary Master	: Auto	0M	0	0	0	0	0 AUTO										
Secondary Slave	: Auto	0M	0	0	0	0	0 AUTO										
Drive A : 1.44, 3.5 in				<table border="1"> <tr> <td>Base Memory :</td> <td>640K</td> </tr> <tr> <td>Extended Memory :</td> <td>64512K</td> </tr> <tr> <td>Other Memory :</td> <td>384K</td> </tr> <tr> <td colspan="2"><hr/></td> </tr> <tr> <td>Total Memory :</td> <td>65536K</td> </tr> </table>				Base Memory :	640K	Extended Memory :	64512K	Other Memory :	384K	<hr/>		Total Memory :	65536K
Base Memory :	640K																
Extended Memory :	64512K																
Other Memory :	384K																
<hr/>																	
Total Memory :	65536K																
Drive B : None																	
Video : EGA / VGA																	
Halt On : All Errors																	
Esx : Quit		↑ ↓ → ← : Select Item		PU/PD/+/- : Modify													
F10 : Save & Exit Setup		(Shift) F2 : Change Color															

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys.



**Date (mm:dd:yy)** Set the current date and time.  
**Time (hh:mm:ss)**

**Primary / Secondary** This field records the specifications for all non-SCSI  
**Master / Slave** hard disk drives installed in your system. Refer to the  
respective documentation on how to install the drives.

**Drive A / Drive B** Set this field to the type(s) of floppy disk drive(s) in-  
stalled in your system. The choices are:  
360KB, 5.25in.,  
1.2MB, 5.25in.,  
720KB, 3.5in.,  
1.44MB, 3.5in., (default)  
2.88MB, 3.5in.,  
None.

**Video** Set this field to the type of video display card installed  
in the system. The choices are:  
Monochrome,  
Color 40x25,  
VGA / EGA, (default)  
Color 80x25.

**Halt On** Set this warning feature for the type of errors that will  
cause the system to halt. The choices are:  
No Errors,  
All, But Keyboard,  
All, But Diskette,  
All, But Disk / Key.

3. Press <ESC> to return to the Main Menu when you finish setting up all  
items.

## 3-2 BIOS FEATURES SETUP

- BIOS FEATURES SETUP allows you to improve your system performance or set up system features according to your preference.

Run the BIOS FEATURES SETUP as following:

1. Choose “BIOS FEATURES SETUP” from the Main Menu and a screen with a list of option will appear:

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
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D4000-D7FFF Shadow	: Disabled
BOot Sequence	: A, C, SCSI	D8000-DBFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled		
Boot Up NumLock Status	: On		
IDE HDD Block Mode	: Enabled		
Gate A20 Option	: Fast		
Memory Parity / ECC Check	: Disabled		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars / Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup	Esc : Quit	↑ ↓ → ← : Select Item
PCI / VGA Palette Snoop	: Disabled	F1 : Help	PU/PD/+/- : Modify
OS Select for DRAMs > 64MB	: Non-OS/2	F5 : Old Value	(Shift) F2 : Color
Report No FDD For WIN95	: No	F7 : Load Setup Defaults	

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives options available for each item.

<Shift> + <F2>: Change color.

<F5>: Get the previous values. These values are the values with which the user started in the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

- Virus Warning** Enabled: Activates automatically when the system boots up causing a warning message to appear if there is anything attempting to access the boot sector or hard disk partition table.
- Disabled: No warning message will appear when there is something attempting to access the boot sector or hard disk partition table.

**NOTE:** *Many diagnostic (or boot manager) programs which attempt to access the boot sector table can cause the above warning message. If you will be running such a program, we recommend that you disable the virus protection first.*

- CPU Internal Cache** Choose Enabled (default) or Disabled. This option allows you to enable or disable the CPU's internal cache.
- External Cache** Choose Enabled (default) or Disabled. This option allows you to enable or disable the external cache.
- Quick Power On Self Test** Choose Enabled (default) or Disabled. This option allows you to speed up the Power-On Self-Test routine.
- Boot Sequence** Default is "A, C, SCSI". This option determines which drive to boot at first for an operating system.
- Swap Floppy Drive** Choose Enabled or Disabled (default). This option swaps floppy drive assignments when it is enabled.
- Boot Up Floppy Seek** Enabled (default): During POST, BIOS checks the track number of the floppy disk drive to see whether it is 40 or 80 tracks.
- Disabled: During POST, BIOS will not check the track number of the floppy disk drive.
- Boot Up NumLock Status** Choose ON (default) or OFF. This option lets user activates the NumLock function at boot-up.

**IDE HDD Block Mode** Choose Enabled (default) or Disabled. If your hard disk size is larger than 540MB, then choose Enabled. If you are using the IDE HDD AUTO DETECTION option, the BIOS will choose this option automatically.

**NOTE:** *Some older model HDDs do not provide this feature.*

**Gate A20 Option** Choose Normal or Fast (default). This option allows the RAM to access the memory above 1MB by using the fast gate A20 line.

**Memory Parity /  
ECC Check** Choose Enabled or Disabled.

**Typematic Rate Setting** Choose Enabled or Disabled (default). Enable this option to adjust the keystroke repeat rate.

**Typematic Rate (Chars  
/ Sec)** Range between 6 (default) and 30 characters per second. This option controls the speed of repeating keystrokes.

**Typematic Delay  
(Msec)** Choose 250 (default), 500, 750 and 1000. This option sets the time interval for displaying the first and the second characters.

**Security Option** Choose System or Setup (default). This option prevents unauthorized system boot-up or use of BIOS setup.

**PCI / VGA Palette  
Snoop** Choose Enabled or Disabled (default). It determines whether or not the MPEG ISA cards can work with PCI / VGA.

**OS Select For DRAM >  
64MB** Non-OS/2 (default): For Non-OS/2 system.  
OS: For OS/2 operating system.

**Report No FDD For** Yes : BIOS reports "NO FDD" to Win95.  
**WIN95** No (default): BIOS will not report "NO FDD" to Win95.

**Video BIOS Shadow** Enabled copies Video BIOS to shadow RAM for improving performance.  
The choice: Enabled (default), Disabled.

**C8000-CBFFF to** These options are used to shadow other expansion  
**DC000-DFFFF Shadow** card ROMs.

3. Press <ESC> to return to the Main Menu when you finish setting up all items.

### 3-3 CHIPSET FEATURES SETUP

- CHIPSET FEATURES SETUP allows you to change the values of chipset registers. These registers control the system options.

Run the CHIPSET FEATURES SETUP as following:

1. Choose “CHIPSET FEATURES SETUP” from the Main Menu and a screen with a list of option will appear:

ROM PCI/ISA BIOS  
CHIPSET FEATURES SETUP  
AWARD SOFTWARE, INC.

Bank 0/1 DRAM Timing : SDRAM 10ns	CPU Host Clock (CPU/PCI) : Default
Bank 2/3 DRAM Timing : SDRAM 10ns	
Bank 4/5 DRAM Timing : SDRAM 10ns	
SDRAM Cycle Length : 3	
DRAM Clock : Host CLK	
Memory Hole : Disabled	
Read Around Write : Enabled	
Concurrent PCI/Host : Disabled	
System BIOS Cacheable : Disabled	
Video RAM Cacheable : Disabled	
AGP Aperture Size : 64M	
AGP-2X Mode : Disabled	
OnChip USB1 : Enabled	
OnChip USB2 : Enabled	
USB Keyboard Support : Disabled	
OnChip Sound : Enabled	
OnChip Modem : Disabled	
	Esc : Quit    ↑ ↓ → ← : Select Item
	F1 : Help      PU/PD/+/- : Modify
	F5 : Old Value    (Shift) F2 : Color
	F7 : Load Setup Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives options available for each item.

<Shift> + <F2>: Change color.

<F5>: Get the previous values. These values are the values with which the user started in the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

- Bank 0/1 2/3 4/5 DRAM Timing** This item allows you to select the value in this field, depending on whether the board has paged DRAMs or EDO (Extended Data Output) DRAMs.  
The choice: EDO 50ns,  
EDO 60ns,  
Slow,  
Medium,  
Fast,  
Turbo.
- SDRAM Cycle Length Time** You can select CAS latency time in HCLKs of 2/2 or 3/3. The system board designer should have set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.
- Read Around Write** DRAM optimization feature: If a memory read is addressed to a location whose latest write isw being held in a buffer before being written to memory, the read is satisfied through the buffer contents, and the read is not sent to the DRAM.  
The choice: Enabled, Disabled.
- Concurrent PCI / HOST** When disabled, CPU bus will be occupied during the entire PCI operation period.  
The choice: Enabled, Disabled.
- System BIOS Cacheable** Choose Enabled or Disabled (default). When enabled, the access to the system BIOS ROM addressed at F0000H - FFFFFH is cached.
- Video RAM Cacheable** Choose Enabled or Disabled (default). When enabled, the access to the VGA RAM addressed is cached.
- AGP Aperture Size (MB)** Choose 4, 8, 16, 32, 64 (default), 128 or 256 MB. Memory mapped and graphics data structures can reside in a Graphics Aperture. This area is like a linear buffer. BIOS will automatically report the starting address of this buffer to the O.S.

**AGP-2X Mode** This item allows you to enable / disable the AGP-2X (Clock 133MHz) mode.

**OnChip USB** This should be enabled if our system has a USB installed on the system board and you wish to use it. Even when so wquipped, if you add a higher performance controller, you will need to disable this feature. The choice: Enabled, Disabled.

**USB Keyboard Support** Enabled: Enable function when the USB keyboard is being used.  
Disabled (default): When the AT keyboard is being used, choose disabled.

**OnChip Sound** Enabled (default): Turn on AC'97 codec chip controller.  
Disabled: Turn off AC'97 codec chip controller or user can plug external add-on sound card.

**OnChip Modem** Enabled: Turn on MC99 feature.  
Disabled (default): Turn off AC'97 codec chip controller or user can connect external add-on modem.

**CPU Host Clock (CPU / PCI)** Choose 66/33MHz, 75/37MHz, 83/41MHz, 100/33MHz, 103/34MHz, 105/35MHz, 110/36MHz, 112/37MHz, 115/38MHz, 124/31MHz, 133/33MHz, 140/35MHz,124/41MHz or 133/44MHz.

3. Press <ESC> to return to the Main Menu when you finish setting up all items.



### 3-4 POWER MANAGEMENT SETUP

- POWER MANAGEMENT SETUP allows you to set the system's power saving functions.

Run the POWER MANAGEMENT SETUP as following:

1. Choose "POWER MANAGEMENT SETUP" from the Main Menu and a screen with a list of option will appear:

ROM PCI/ISA BIOS  
POWER MANAGEMENT SETUP  
AWARD SOFTWARE, INC.

ACPI function	: Disabled	Primary INTR	: ON
Power Management	: User Define	IRQ3 (COM 2)	: Primary
PM Control by APM	: Yes	IRQ4 (COM 1)	: Primary
Video Off After	: Suspend	IRQ5 (LPT 2)	: Primary
Video Off Method	: V/H SYNC+Blank	IRQ6 (Floppy Disk)	: Primary
MODEM Use IRQ	: 3	IRQ7 (LTP 1)	: Primary
Soft-Off by PWRBTN	: Instant-Off	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 (Coprprocessor)	: Primary
LPT & COM	: LPT/COM	IRQ14 (Hard Disk)	: Primary
HDD & FDD	: ON	IRQ15 (Reserved)	: Disabled
DMA/Master	: OFF		
Modem Ring Resume	: Disabled	Esc : Quit	↑ ↓ → ← : Select Item
RTC Alarm Resume	: Enabled	F1 : Help	PU/PD/+/- : Modify
Date (of Month)	: 0	F5 : Old Value	(Shift) F2 : Color
Timer (hh:mm:ss)	: 0: 0: 0	F7 : Load Setup Defaults	

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives oions available for each item.

<Shift> + <F2>: Change color.

<F5>: Get the previous values. These values are the values with which the user started in the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

**ACPI Function** Enabled: Turn on ACPI function.  
 Disabled (default): Turn off ACPI function.

**Power Management** Choose Max. Saving, User Define (default), Disabled or Min. Saving.

**PM Control by APM** When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock, If Advanced Power Management (APM) is installed on your system, selecting Yes gives better power savings. If the Max. Saving is not enabled, this will be present to No.

**Video Off Method** This determines the manner in which the monitor is blanked.

<b>V/H SYNC + Blank</b>	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
<b>Blank Screen</b>	This option only writes blanks to the video buffer.
<b>DPMS</b>	Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards to select video power management values.

**Video Off After** Choose NA, Suspend, Standby (default), or Doze.

**MODEM Use IRQ** This determines the IRQ in which the MODEM can use.  
 The choice: 3, 4, 5, 7, 9, 10, 11, NA.

**Soft-Off by PWR-BTTN** Instant-Off (default): Turn off the system poer at once after pushing the power button.  
 Delay 4 Sec: Turn off the system power 4 seconds after pushing the power button. (to meet PC97/98 spec)

**Doze Mode** This mode sets the CPU speed down to 33MHz.

**Standby Mode / Suspend Mode** These two options allow you to choose the mode for the different timers. The Standby Mode turns off the VGA monitor, and the Suspend Mode turns off the CPU and saves the energy of the system.

**HDD Power Down** Time is adjustable from 1 to 15 minutes. When the set time has elapsed, the BIOS sends a command to the HDD to power down, which turns off the motor.

**Modem Ring Resume** An input signal on the serial Ring Indicator (RI) Line (in other words, an incoming call on the modem) Awakens the system from a soft off state.

**RTC Alarm Resume** When Enabled, you can set the data and time at the which the RTC (Real Time Clock) alarm awakens the system from suspend mode.  
The choice: Disabled (default), Enabled.

**Date (of Month)** Set a certain date when RTC Alarm Resume option is Enabled to awaken the system. This option is concurrent with Resume Time option.

**Time (hh:mm:ss)** Set a certain time when RTC Alarm Resume option is Enabled to awaken the system. This option is concurrent with Date option.

**Primary INTR** When set to On, any event occurring at will awaken a system which has been powered down.  
On (default): The system can not enter the power saving mode when I/O ports or IRQ# is activated.  
Off: The system can enter the power saving mode when I/O ports or IRQ# is activated.

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The following is a list of IRQ's (Interrupt ReQuests), which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service. When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

- IRQ 3 (COM 2)***
- IRQ 4 (COM 1)***
- IRQ 5 (LPT 2)***
- IRQ 6 (Floppy Disk)***
- IRQ 7 (LPT 1)***
- IRQ 8 (RTC Alarm)***

3. Press <ESC> to return to the Main Menu when you finish setting up all items.

### 3-5 PNP / PCI CONFIGURATION SETUP

- PNP/PCI CONFIGURATION SETUP allows you to set the system's power saving functions.

Run the PNP/PCI CONFIGURATION SETUP as following:

1. Choose "PNP/PCI CONFIGURATION SETUP" from the Main Menu and a screen with a list of option will appear:

ROM PCI/ISA BIOS  
PNP/PCI CONFIGURATION  
AWARD SOFTWARE, INC.

PNP OS Installed : No	CPU to PCI Write Buffer : Enabled
Resources Controlled By : Auto	PCI Dynamic Bursting : Enabled
Reset Configuration Data : Disabled	PCI Master 0 WS Write : Enabled
IRQ-3 assigned to : PCI/ISA PnP	PCI Delay Transaction : Enabled
IRQ-4 assigned to : PCI/ISA PnP	PCI#2 Access #1 Retry : Disabled
IRQ-5 assigned to : PCI/ISA PnP	AGP Master 1 WS Write : Disabled
IRQ-7 assigned to : PCI/ISA PnP	AGP Master 1 WS Read : Disabled
IRQ-9 assigned to : PCI/ISA PnP	PCI IRQ Activated By : Level
IRQ-10 assigned to : PCI/ISA PnP	Assign IRQ For USB : Enabled
IRQ-11 assigned to : PCI/ISA PnP	Assign IRQ For VGA : Enabled
IRQ-12 assigned to : PCI/ISA PnP	
IRQ-14 assigned to : PCI/ISA PnP	
IRQ-15 assigned to : PCI/ISA PnP	
DMA-0 assigned to : PCI/ISA PnP	
DMA-1 assigned to : PCI/ISA PnP	Esc : Quit    ↑ ↓ → ← : Select Item
DMA-3 assigned to : PCI/ISA PnP	F1 : Help      PU/PD/+/- : Modify
DMA-5 assigned to : PCI/ISA PnP	F5 : Old Value    (Shift) F2 : Color
DMA-6 assigned to : PCI/ISA PnP	F7 : Load Setup Defaults
DMA-7 assigned to : PCI/ISA PnP	

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.

<Shift> + <F2>: Change color.

<F5>: Get the previous values. These values are the values with which the user started in the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

**PNP OS Installed** Yes: OS supports Plug and Play function.  
No (default): OS doesn't support Plug and Play function.

**NOTE:** *BIOS will automatically disable all PnP resources except the boot device card when you select Yes on Non-PnP operating system.*

**Resource Controlled** Choose Manual (default) or Auto. The BIOS checks  
**By** the IRQ / DMA channel number on the ISA and PCI card manually if you choose Manual and the IRQ / DMA channel number will be checked automatically if you choose Auto.

**Reset Configuration** Choose Enabled or Disabled (default). Disabled re-  
**Data** **tains** PnP configuration data in BIOS and Enabled **resets** the PnP configuration data in BIOS.

**IRQ-x assigned to /** Legacy ISA: Manually assigns IRQ / DMA to device.  
**DMA-x assigned to** PCI / ISA PnP: BIOS automatically assigns IRQ / DMA to device.

**Assign IRQ for USB** Enabled (default): Add one IRQ to USB controller.  
Disabled: Remove IRQ from USB controller. The system will have extra IRQ for other devices but the USB controller will still not be disabled. (only IRQ was removed)

**Assign IRQ for VGA** Enabled (default): Add one IRQ to VGA controller.  
Disabled: Remove IRQ from USB controller. The system will have extra IRQ for other devices but the VGA controller will still not be disabled. (only IRQ was removed)

3. Press <ESC> to return to the Main Menu when you finish setting up all items.

### 3-6 LOAD SETUP DEFAULTS

- LOAD SETUP DEFAULTS option loads the default system values to the system configuration fields. If the CMOS is corrupted, the defaults are loaded automatically.

Choose "LOAD SETUP DEFAULTS" and the following message will appear:

```
  ` Load Setup Defaults  (Y / N) ?   N  `
```

To use the setup defaults, change the prompt to "Y" and press <Enter> key.

### 3-7 CPU SPEED SETTING

- CPU SPEED SETTING option allows you to get some informations inside your system when it is working.

Run the CPU SPEED SETTING as following:

1. Choose “CPU SPEED SETTING” from the Main Menu and a screen with a list of option will appear:

ROM PCI/ISA BIOS  
CPU SPEED SETUP  
AWARD SOFTWARE, INC.

Current CPU Temp. : Current SYSTEM Temp. : Current CPUFAN1 Speed : Current CPUFAN2 Speed : Vcore : 2.5V : 3.3V : 5V : 12V :	Esc : Quit    ↑ ↓ → ← : Select Item F1 : Help      PU/PD/+/- : Modify F5 : Old Value    (Shift) F2 : Color F7 : Load Setup Defaults
---	--

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives oions available for each item.

<Shift> + <F2>: Change color.

<F5>: Get the previous values. These values are the values with which the user started in the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.



**Current CPU Temp.** Shows current CPU temperature.

**Current System Temp.** Shows current system temperature.

**Current CPUFAN1 Speed** Shows current CPUFAN1 speed. The fan must provide rotary pulse. (Normally these types of fan have a three-wire connector)

**Current CPUFAN2 Speed** Shows current CPUFAN2 speed. The fan must provide rotary pulse. (Normally these types of fan have a three-wire connector)

**Voltage** Shows power supply actual voltage value.

3. Press <ESC> to return to the Main Menu when you finish setting up all items.

### 3-8 INTEGRATED PERIPHERALS

- INTEGRATED PERIPHERALS option allows you to get some informations inside your system when it is working.

Run the INTEGRATED PERIPHERALS as following:

1. Choose “INTEGRATED PERIPHERALS” from the Main Menu and a screen with a list of option will appear:

ROM PCI/ISA BIOS  
INTEGRATED PERIPHERALS  
AWARD SOFTWARE, INC.

OnChip IDE Channel0 : Enabled	Onboard Parallel Port : 378/IRQ7
OnChip IDE Channel1 : Enabled	ECP Mode Use DMA : 3
IDE Prefetch Mode : Enabled	Parallel Port EPP Type : EPP1.7
Primary Master PIO : Auto	Onboard Legacy Audio : Enabled
Primary Slave PIO : Auto	Sound Blaster : Enabled
Secondary Master PIO : Auto	SB I/O Base Address : 220H
Secondary Slave PIO : Auto	SB IRQ Select : IRQ 5
Primary Master UDMA : Auto	SB DMA Select : DMA 1
Primary Slave UDMA : Auto	MPU-401 : Disabled
Secondary MasterUDMA : Auto	MPU-401 I/O Address : 330-333H
Secondary Slave UDMA : Auto	FM Port (388-38BH) : Disabled
Init Display First : PCI Slot	Game Port (200-207H) : Enabled
Onboard FDC Controller : Enabled	
Onboard Serial Port 1 : 3F8/IRQ4	
Onboard Serial Port 2 : 2F8/IRQ3	
UART 2 Mode :	Esc : Quit ↑ ↓ → ← : Select Item
IR Function Duplex : Half	F1 : Help PU/PD/+/- : Modify
TX, RX inverting enable : No, No	F5 : Old Value (Shift) F2 : Color
Onboard Parallel Port : 378/IRQ7	F7 : Load Setup Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives oions available for each item.

<Shift> + <F2>: Change color.

<F5>: Get the previous values. These values are the values with which the user started in the current session.

<F6>: Load all options with the BIOS default values.

<F7>: Load all options with the Setup default values.

**OnChip IDE Channel 0 / 1** The chipset contains a PCI IDE interface with support from two IDE channels. Select Enabled to activate the first and/or the second IDE interface. Select Disabled to deactivate an interface if you install a primary and/or second add-on IDE interface.  
The choice: Enabled (default), Disabled.

**Primary Master / Slave PIO** Choose Auto (default) or Mode 0~4. The BIOS will detect the HDD mode type automatically when you choose Auto. You need to set to a lower mode than Auto when your hard disk becomes unstable.  
**Secondary Master / Slave PIO**  
The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

**Primary Master / Slave UDMA** Ultra DMA/66 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA drive and your system software both support Ultra DMA/66, select Auto to enable BIOS support.  
**Secondary Master / Slave UDMA**  
The choice: Auto, Disabled.

**IDE Prefetch Mode** The onboard IDE drive interfaces supports IDE prefetching for faster drive accesses. If you install a primary and/or secondary add-in IDE interfaces, set this field to Disabled if the interface does not support prefetching.  
The choice: Enabled, Disabled.

**Init Display First** This option allows you to decide to activate PCI Slot or AGP first.  
The choice: PCI Slot (default), AGP.

**Onboard FDC Controller** Select Enabled if your system has a floppy drive controller (FDC) installed on the system board and you want to use it. If you install add-in FDC or the system has no floppy drive, select Disabled in this field.  
The choice: Enabled, Disabled.

**Onboard Serial Port 1 / Port 2** Select an address and corresponding interrupt for the first and second serial ports.  
The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

- UART 2 Mode** This item allows you to select which mode for the Onboard Serial Port 2.  
The choice: Standard, HPSIR, ASKIR
- IR Function Duplex** This item allows you to select the IR half / full duplex function.  
The choice: Half, Full.
- TX, RX inverting enable** This item allows you to enable the TX, RX inverting which depends on different H/W requirement. This field is not recommended to change its default setting for avoiding any error in your system.  
The choice: "No, No", "No, Yes"(default), "Yes, No", "Yes, Yes".
- Onboard Parallel Port** This item allows you to determine onboard parallel port controller I/O address setting.  
The choice: 378H/IRQ7, 278H/IRQ5, 3BC/IRQ7, Disabled.
- Parallel Port Mode** Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available modes.  
The choice: SPP, EPP, ECP, ECP + EPP.
- ECP Mode Use DMA** Select a DMA channel for the parallel port for use during ECP mode.  
The choice: 3, 1.
- EPP Mode Select** Select EPP port type 1.7 or 1.9  
The choice: EPP1.7, 1.9.
- Onboard Legacy Audio** This field controls the onboard audio.
- Sound Blaster
  - SB I/O Base Address
  - SB IRQ Select
  - SB DMA Select
  - MPU-401
  - MPU-401 I/O Address
  - Game Port (200-207H)

3. Press <ESC> to return to the Main Menu when you finish setting up all items.

### 3-9 SUPERVISOR / USER PASSWORD

- These two options allow you to set your system passwords. Normally, the supervisor has a higher ability to change the CMOS setup option than the user. The way to set up the passwords for both Supervisor and User are as follows:

1. Choose "Change Password" in the Main Menu and press <Enter>. The following message appears:

**"Enter Password : "**

2. The first time you run this option, enter your password up to 8 characters and press <Enter>. The screen does not display the entered characters.
3. After you enter the password, the following message appears prompting you to confirm the password:

**"Confirm Password : "**

4. Enter the same password "exactly" as you just typed again to confirm the password and press <Enter>.
5. Move the cursor to Save & Exit Setup to save the password.
6. If you need to delete the password you entered before, choose the Supervisor Password and press <Enter>. It will delete the password that you had before.
7. Move the cursor to Save & Exit Setup to save the option you did, otherwise the old password will still be there the next time you turn your system on.
8. Press <Enter> to exit to the Main Menu.

***NOTE: If you forget or lose the password, the only way to access the system is to clear the CMOS RAM. All setup information will be lost and you need to run the BIOS setup program again.***

### 3-10 HDD AUTO DETECTION

- IDE HDD AUTO DETECTION option can automatically detect and find the parameters of IDE Hard Drive. Meanwhile, the informations that BIOS detected will record to the STANDARD CMOS SETUP screen.
- The screen will request you to select a specific Hard Drive for Primary Master after you select this option. If you accept a Hard Drive detected by the BIOS, you can press "Y" to confirm and then press <Enter> to check next Hard Drive. This function allows you to check four Hard Drives and you may press <ESC> after the <Enter> to skip this function and go back to the Main Menu.

### 3-11 SAVE & EXIT SETUP

- SAVE & EXIT SETUP allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and the following message appears:

```
"SAVE to CMOS and EXIT (Y/N) ? Y "
```

Press <Enter> key to save the configuration changes.

### 3-12 EXIT WITHOUT SAVING

- EXIT WITHOUT SAVING option allows you to exit the Setup Utility without saving the modifications that you have specified. Highlight this option on the Main Menu and the following message appears:

```
"Exit Without Saving (Y/N) ? N "
```

You may change the prompt to "Y" and press <Enter> key to leave this option .