



**SL-65DVB/65DV2 V1.0**

**USER MANUAL**

<b>Product Model</b>	<b>: SL-65DVB/65DV2</b>
<b>Manual Revision</b>	<b>: V1.0</b>
<b>Release Date</b>	<b>: November 2000</b>

## **USER NOTICE**

**T**his Users Guide & Technical Reference is for assisting system manufacturers and end-users in setting up and installing the motherboard.

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# CHAPTER 1

## INTRODUCTION

### 1-1 ITEM LIST CHECKUP

- Motherboard
- Support CD
- User's Manual
- Bundle Bonus Pack CD
- Bundle Bonus Pack Manual
- Temperature Sensor Cable
- ATA 66/100 IDE Cable
- FDD Cable

### 1-2 CPU

- Supports Intel® FC-PGA Pentium !!!™ up to 1GHz or above.
- Supports Intel® FC-PGA 370 Celeron & PGA 370 Celeron up to 766MHz or above.
- Supports VIA Cyrix !!! up to 600MHz.
- Supports CPU voltage Auto-Detect circuit.

### 1-3 CHIPSET

- North Bridge - VIA VT82C693A APOLLO PRO-PLUS.
- South Bridge - VIA VT82C686A (for 65DVB only)  
VIA VT82C686B (for 65DV2 only)

### 1-4 ADVANCED HIGH-PERFORMANCE DRAM CONTROLLER

- Supports FP, SDRAM, VCM memory types up to 3 DIMMS.
- 64-bit data width and 3.3V DRAM interface.
- Supports up to 768MB memory space.
- Different DRAM types may be used in mixed combinations.
- PCI-2.2 compliant, 32 bit 3.3V PCI interface with 5V tolerant inputs .
- DRAM interface synchronous with host CPU (66/100/133 MHz) or AGP (66MHz) for most flexible configuration.
- DRAM interface may be faster than CPU by 33MHz to allow use of PC100

memory modules with 66MHz Celeron or use of PC133 with 100MHz Pentium III.

- DRAM interface may be slower than CPU by 33 MHz to allow use of older memory modules with newer CPUs (e.g., PC66 memory modules with 100 MHz Pentium III).

## **1-5 FULL FEATURED ACCELERATED GRAPHICS PORT (AGP) CONTROLLER**

- AGP v2.0 compliant
- Supports Sideband Addressing (SBA) mode (non-multiplexed address/data)
- Supports 133MHz 2x mode for AD and SBA signaling
- Pipelined split-transaction long-burst transfers up to 533 MB/sec

## **1-6 MULTI-I/O FUNCTION**

- Two Ultra DMA-33 / 66 Master Mode PCI EIDE ports (for 65DVB only).
- Two Ultra DMA-33 / 66 / 100 Master Mode PCI EIDE ports (for 65DV2 only).
- Two UART's for Complete Serial Ports.
- One dedicated IR connector:  
Third serial port dedicated to IR function either through the two complete serial ports or the third dedicated port Infrared-IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR.
- Multi-mode parallel connector:  
Standard mode, ECP and EPP support.
- Floppy Disk connector:  
Two FDDs with drive swap support .
- Universal Serial Bus connector:  
--- USB v1.1 and Intel Universal HCI v1.1 compatible.  
--- Provides 2 build-in USB ports (another 2 internal USB ports for extensible purpose require an optional USB connect cable).
- PS/2 Keyboard connector.
- PS/2 Mouse connector.

## **1-7 EXTENSION SLOTS**

- Five PCI bus Mater slots.
- One ISA slot.
- One AMR slot.

## **65DVB/65DV2**

- One AGP 4x mode slot.
- Three DIMM slots.

## **1-8 BIOS**

- Award BIOS Version 6.0.
- Supports Plug & Play V1.0.
- FLASH MEMORY for easy upgrade.
- Supports BIOS writing protection.
- Year 2000 compliant.

## **1-9 SOUND CONTROLLER**

- Sound Blaster Pro Hardware and Direct Sound Ready AC'97 Digital Audio Controller with Codec onboard.

## **1-10 POWER MANAGEMENT**

- ACPI 1.0 compliant (Advanced Configuration and Power Interface).
- APM V1.2 compliant (Legacy power management).
- System event monitoring with two event classes.
- Supports PS/2 Keyboard & Mouse power on.
- Supports Wake On LAN (WOL) & Wake On Modem.
- Supports real time clock (RTC) with date alarm, month alarm, and century field.

## **1-11 FROM FACTOR**

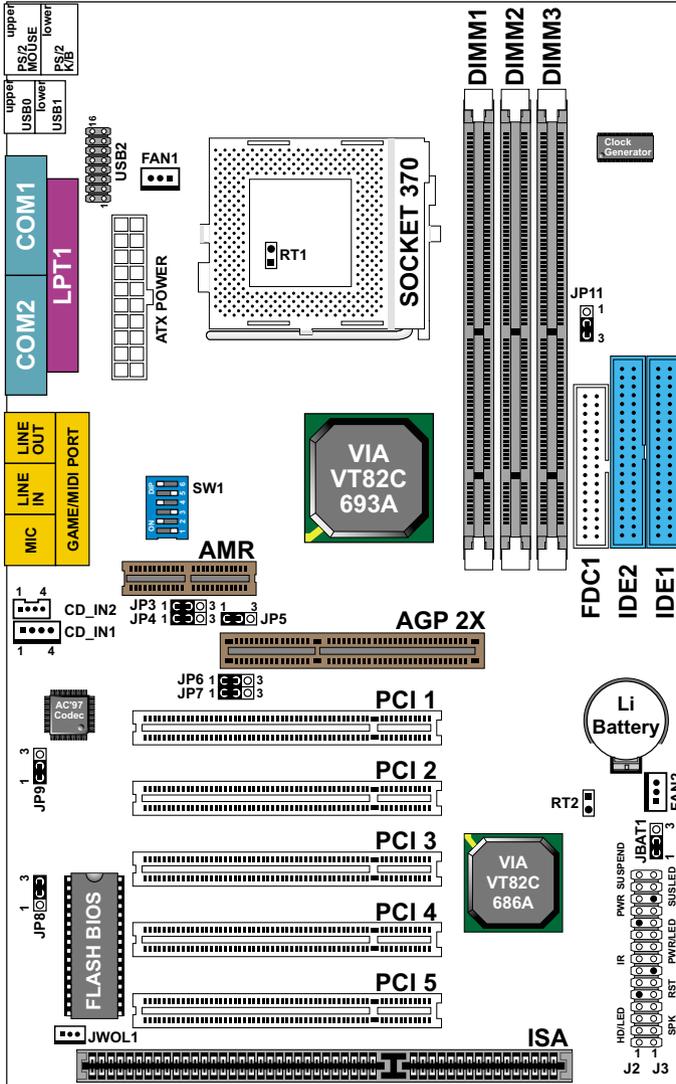
- ATX form factor, 4 layers PCB.
- Motherboard size 19.0cm X 30.5cm.

## **1-12 HARDWARE MONITORING**

- Programmable control, status, monitor and alarm for flexible desktop management (software included).
- Five-positive voltage.
- Two-temperature monitoring.
- Three Fan-speed monitoring.

# 1-13.1 MOTHERBOARD LAYOUT --- 65DVB

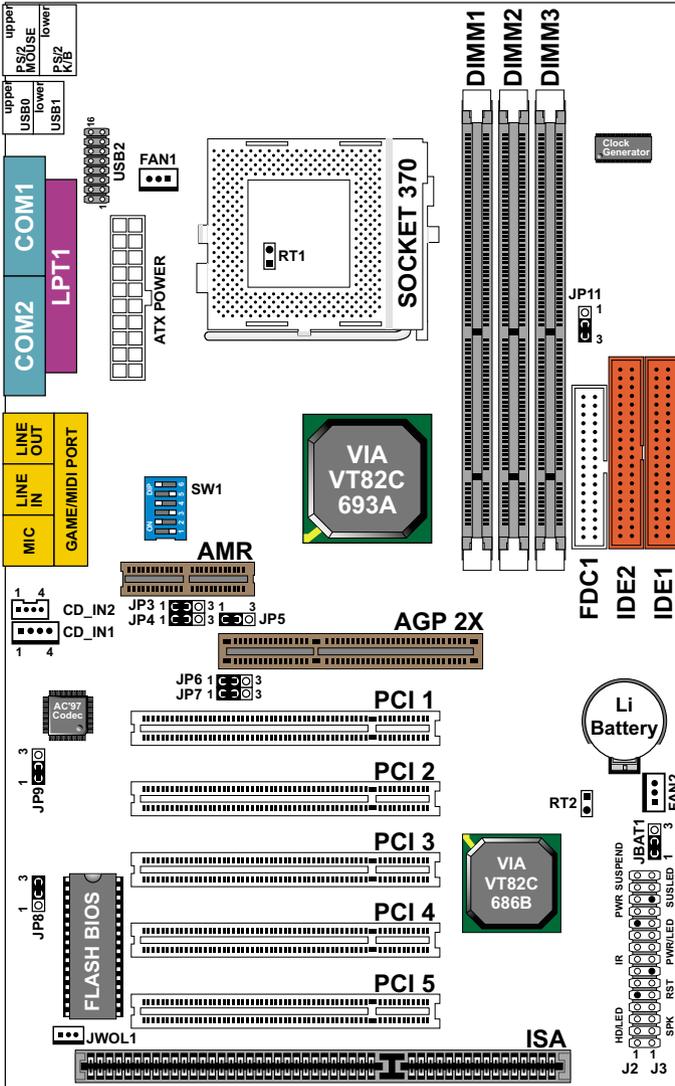
- Default Setting: Intel Celeron 300A/66 MHz



Using non-compliant memory with higher bus clock (over clocking) may severely compromise the integrity of system.

### 1-13.2 MOTHERBOARD LAYOUT --- 65DV2

- Default Setting: Intel Celeron 300A/66 MHz



Using non-compliant memory with higher bus clock (over clocking) may severely compromise the integrity of system.

## 1-14 CHIPSET SYSTEM BLOCK DIAGRAM

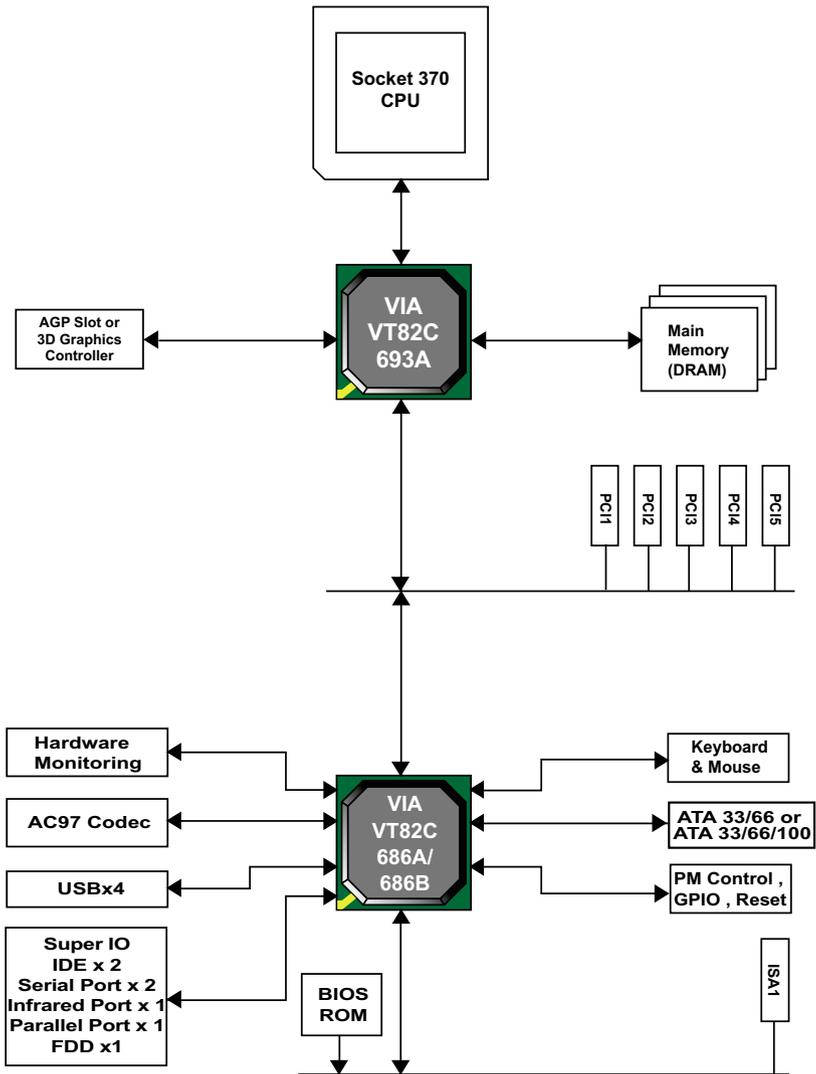


Figure 1-11. VIA VT82C 693A System Block Diagram Using the VT82C686A or VT82C686B South Bridge

## 1-15 MOTHERBOARD SPECIFICATION TABLE OF 65DVB & 65DV2

<b>Model</b>	<b>65DVB</b>	<b>65DV2</b>
<b>North bridge</b>	<b>VIA VT82C693A APOLLO PRO-PLUS</b>	
<b>South bridge</b>	<b>VIA686A</b>	<b>VIA686B</b>
<b>Memory</b>	<b>Supports PC133 and PC100 FP, SDRAM and Virtual Channel Memory (VCM) up to 768MB 3 DIMM Slots</b>	
<b>AGP Interface</b>	<b>AGP Pro 2X Mode</b>	
<b>Audio</b>	<b>Build-in AC97 codec</b>	
<b>IDE</b>	<b>2 x Ultra 33/66 IDE ports</b>	<b>2 x Ultra33/66/100 IDE ports</b>
<b>I/O</b>	<b>4 x USB ports, 1 x FDD port, 2 x COM ports, 1 x LPT port, 1 x IrDA, PS/2 Mouse, PS/1 K/B</b>	
<b>PCI slot</b>	<b>5 x PCI Master Slots</b>	
<b>ISA slot</b>	<b>1 x ISA slot</b>	
<b>Hardware Monitoring</b>	<b>yes</b>	
<b>BIOS writing Protection</b>	<b>yes</b>	
<b>Remark</b>		

**ATTENTION !!!**

---

1. Please refer to your processor installation or other documentation attached with your CPU for detailed installing instruction.
2. Installing a heat sink and cooling fan is necessary for proper heat dissipation from your CPU. Uncorrected installation may result in overheating and damage of your CPU.
3. Before changing the setting of CPU Vcore from BIOS program, user **SHOULD** make sure of correct specification both of CPU **CLOCK** and **RATIO**. Uncorrected setting may cause damage to your CPU.

# CHAPTER 2

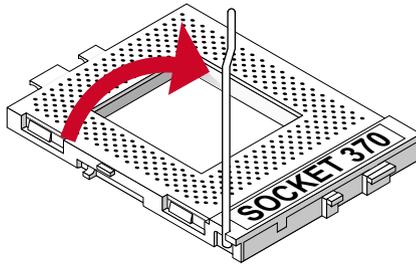
## HARDWARE SETUP

### 2-1 CPU INSTALLATION

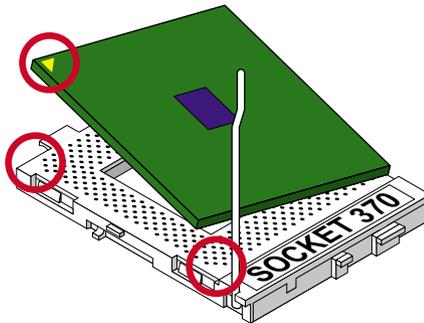
**Warning!!!**

Never run the processor without the heat sink properly and firmly attached  
PERMANENT DAMAGE WILL RESULT.

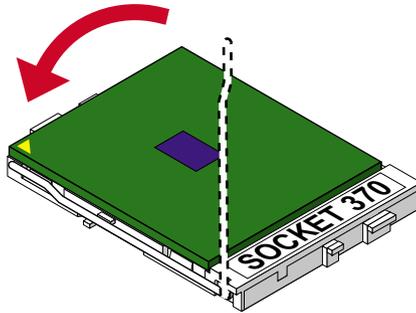
1. Pull the lever sideways away from the socket, and then raise the lever up to a 90-degree angle.



2. Take note of the red circle as below picture. When insert the CPU into socket, you can find out there is a definite pin orientation for CPU and socket.



3. Make sure that the CPU positions in the socket tightly, and then put the lever down to complete the CPU installation.



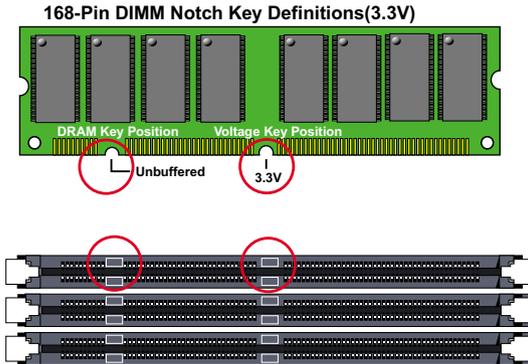
## 2-2 MEMORY INSTALLATION

### WARNING !!!

- Make sure that you unplug your power supply when adding or removing memory modules or other system components, failure to do so may cause severe damage to both your motherboard and expansion cards.
- Be careful when inserting or removing DIMM, forcing a DIMM in or out of a socket can be damaged the memory module or the socket. Some of DIMMs contain EDO or FPM DRAM that accept only 5V power. These DIMM types are incompatible with the motherboard, the M/B only supports 3.3V true SDRAM DIMMs

### Installing DIMM:

- Make sure you have the correct memory module type for your motherboard.
  - Insert the module(s) as shown, DIMMs have 168-pins and two notches that will match with the onboard DIMM socket, memory modules are installed by inserting them straight into the slot until they "click" into place. They only fit in one direction so do not force them into place.

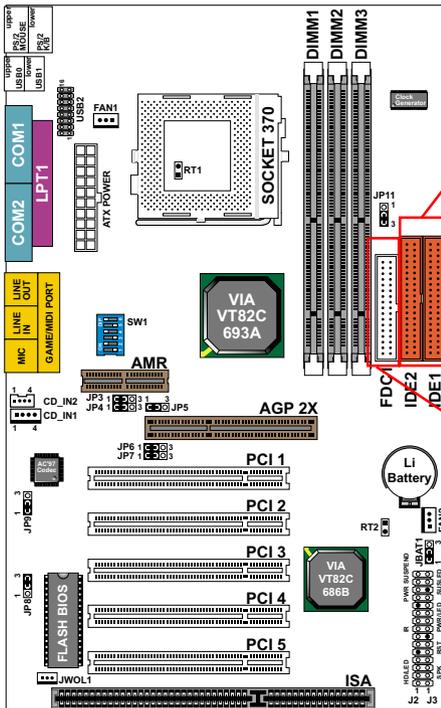


### Removing:

- Press the holding clips on both sides of socket out ward to release the DIMM, Gently pull the DIMM out of the socket.

## 2-3 HDD / FDD INSTALLATION

- To install HDD (Hard Disk Drive), you may connect the cable's blue connector to the motherboard's primary (IDE1) or secondary IDE connector, and then connect the gray connector to your slave device. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper accordingly. Please refer to your hard disk documentation for the jumper settings.
- To install FDD (Floppy Disk Drive), you may connect the single end to the board, and connect two plugs on the other end to the floppy drives.



Hard Disk Drive Connector:  
Orient the red markings on  
the IDE ribbon cable to Pin1.

Floppy Disk Drive Connector:  
Orient the red markings on  
the floppy ribbon cable to  
Pin1.

## 2-4 BUS RATIO SELECT

- Normally, the Bus Ratio (Frequency Multiple) of your processor is locked by processor's Vendor, setting of the CPU Bus Ratio will have no effect.
- Bus Ratio exceed 8.0X, user can not change all values from the ratio will be detected by BIOS automatically.
- The Bus Ratio Setting is available on unlocked processors only.

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

### 2-4.1 BUS CLOCK SELECT

- Over clocking is not recommended, your system may work unstable.

SW1 DIP5 ~ DIP6			JP11: FSB SELECT	
66/100/133MHz Auto Select (default)	ON		1	
	OFF		3	
100MHz	ON		1	
	OFF		3	
133MHz	ON		1	
	OFF		3	

## 2-5 JUMPER DEFINITION

- The figure below shows the location of the motherboard's jumper blocks.

### CAUTION

- Do not move the jumper with the power on. Always turn off the power and unplug the power cord from the computer before changing the jumper. Otherwise, the motherboard could be damaged.

### 2-5.1 ONBOARD FAN CONNECTOR (FAN1/FAN2)

FAN1 / FAN2: ONBOARD FAN CONNECTOR (12V)	
CPU FAN	FAN1 
SYSTEM FAN	FAN2 

Those connectors support processor/system cooling fan with +12V. Those support three pin head connector. When connecting the wire to FAN connectors, user should give attention that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If your motherboard has Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of this function.

For fans with fan speed sensor, every rotation of the fan will send out 2 pulses. System Hardware Monitor will count and report the fan rotation speed.



NOTE 1: Always consult vendor for proper CPU cooling fan.

NOTE 2: CPU FAN supports the FAN control. You can install PC Alert utility. This will automatically control the CPU FAN speed according to the actual CPU temperature.

### 2-5.2 USB PORT SELECT-1 (JP3/JP4)

JP3/JP4: USB PORT SELECT (1)	
Redirect USB port 3 to USB 2 connector (default)	JP3  JP4 
Redirect USB port 3 to AMR	JP3  JP4 

### 2-5.3 ONBOARD AC'97 CODEC SELECT (JP5/JP9)

JP5/JP9: ONBOARD AC'97 CODEC SELECT	
Disabled	JP5  JP9 
Enabled (default)	JP5  JP9 

### 2-5.4 USB PORT SELECT-2 (JP6/JP7)

JP6/JP7: USB PORT SELECT (2)	
Redirect USB port 2 to USB 2 connector (default)	JP6  JP7 
Redirect USB port 2 to AGP	JP6  JP7 

### 2-5.5 POWER LOST RESUME (JP8)

JP8: POWER LOST RESUME	
Normal (default)	JP8 
Enabled	JP8 

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

### 2-5.6 CD-ROM AUDIO CONNECTOR (CD\_IN1/CD\_IN2)

CD_IN1/CD_IN2: CD-ROM AUDIO CONNECTOR		
PIN NO.	CD_IN1	CD_IN2
PIN 1	GND	Left Channel
PIN 2	Left Channel	GND
PIN 3	GND	GND
PIN 4	Right Channel	Right Channel

## 2-5.7 CLEAR CMOS DATA (JBAT1)

JBAT1: CLEAR CMOS DATA	
Clear CMOS Data	JBAT1 
Retain Data (default)	JBAT1 

A battery must be used to retain the motherboard configuration in CMOS RAM.

**NOTE** : You can clear CMOS by shorting 2-3 pin when the system is POWER OFF. Then, return to 1-2 pin position (default). It may damage the motherboard if clearing the CMOS in POWER ON status. Unplug the power cord from power supply before clearing CMOS will be a best bet for user.

## 2-5.8 WAKE ON LAN FUNCTION (WOL1)

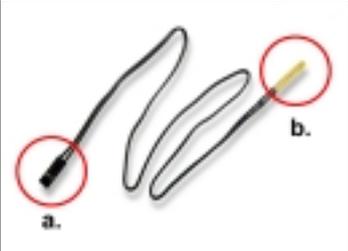
WOL1 : WAKE ON LAN (WOL) FUNCTION	
Connect the Wake On LAN signal from LAN card to WOL1	WOL1 



This connector connects to a LAN card with a Wake On LAN output. The connector powers up the system when a wake-up packet or signal is received through the LAN card.

This feature requires that Wake On LAN feature is enabled at the BIOS “*Power Management Setup*” and that your system has an ATX power supply with at least **720mA / +5V** standby power.

## 2-5.9 THERMAL SENSOR CONNECTOR (RT2)

RT2: THERMAL SENSOR CONNECTOR	
 The diagram shows a black cable with a looped end. Two specific points are highlighted with red circles and labeled 'a' and 'b'. Point 'a' is at the black end of the cable, and point 'b' is at the yellow tip of the looped end.	<p>a: Connect to RT2. 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>

**USB2: 2nd USB Port**

**GAME/MIDI PORT**

**MIC port: Microphone Jack**

**Line In port: Audio In Jack**

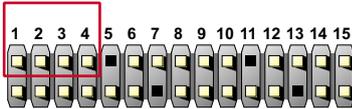
**Line Out / Speaker Out port: Audio Out Jack**

## 2-6 CONNECTORS

- In this section we list all external connectors that user will use them.

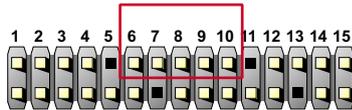
### 2-6.1 J2J3

**J2**



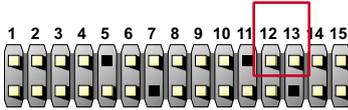
HDD LED CONNECTOR	
PIN 1	+5V
PIN 2	HDD LED SIGNAL
PIN 3	HDD LED SIGNAL
PIN 4	+5V
DESCRIPTION	This connector supplies power to the cabinet's IDE activity LED. Read and write activity by devices connected to the Primary or Secondary IDE connector will cause the LED to light up.

**J2**



INFRARED CONNECTOR	
PIN 6	INFRARED TRANSMIT SIGNAL
PIN 7	GND
PIN 8	INFRARED RECEIVE SIGNAL
PIN 9	NONE
PIN 10	+5V
DESCRIPTION	This connector supports an optional wireless transmitting and receiving infrared module. This module mounts to a small opening on system cases that support this feature. User must also configure the setting through BIOS program "Peripheral Setup" to select whether UART2 is directed for use with COM2 or IrDA. Use the five pins and connect a ribbon cable from the module to the motherboard's IR connector according to the pin definitions.

**J2**



<b>ATX POWER SWITCH</b>	
<b>PIN 12</b>	<b>ATX POWER SWITCH</b>
<b>PIN 13</b>	<b>GND</b>
<b>DESCRIPTION</b>	<p>The system power is controlled by a momentary switch connected to this lead.                      Pressing the button once will switch the system between ON and SOFT OFF.                      Pushing the switch while in the ON mode for more 4 seconds will turn the system off.                      The system power LED shows the status of the system's power.</p>

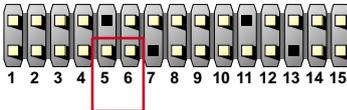
**J2**



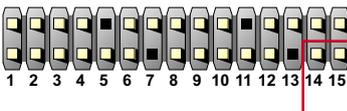
<b>SMI CONNECTOR</b>	
<b>PIN 14</b>	<b>SMI(System Managment Interrupt) SIGNAL</b>
<b>PIN 15</b>	<b>GND</b>
<b>DESCRIPTION</b>	<p>This allows user to manually place the system into a suspend mode or "Green" mode, where system activity is decreased to save electricity and prolong the life of certain components 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 settings in the BIOS but the keyboard will always allow wake-up(the SMI lead cannot wake up the system).</p>

**J3**

<b>SPEAKER CONNECTOR</b>	
<b>PIN 1</b>	<b>SPEAKER SIGNAL</b>
<b>PIN 2</b>	<b>NONE</b>
<b>PIN 3</b>	<b>GND</b>
<b>PIN 4</b>	<b>+5V</b>
<b>DESCRIPTION</b>	This <b>SPEAKER</b> connector connects to the case-mounted speaker. Two sources ( <b>LINE OUT</b> and <b>SPEAKER</b> ) allow you to hear system beeps and warnings. Only <b>SPEAKER</b> allows you to hear system beeps before the integrated audio has been properly initialized.

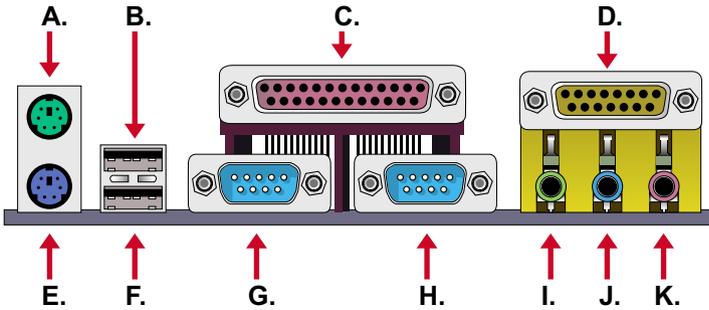
**J3**

<b>RESET SWITCH CONNECTOR</b>	
<b>PIN 5</b>	<b>RESET SIGNAL</b>
<b>PIN 6</b>	<b>GND</b>
<b>DESCRIPTION</b>	<b>RESET SWITCH</b> connector connects to the case-mounted reset switch for rebooting your system without having to turn off your power switch. This is a preferred method of reboot to prolong the life of the system's power supply.

**J3**

<b>SUSPEND LED</b>	
<b>PIN 14</b>	<b>SUSPEND LED SIGNAL</b>
<b>PIN 15</b>	<b>GND</b>
<b>DESCRIPTION</b>	Connect to Suspend indicator light.

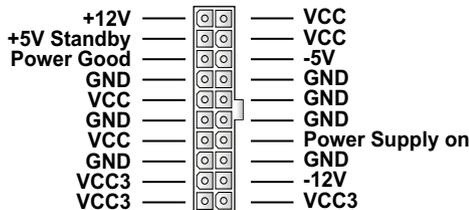
## 2-6.2 CHASSIS PANEL CONNECTOR



- A : PS/2 MOUSE PORT
- B : USB 0 PORT
- C : LPT1 PORT
- D : GAME/MIDI PORT
- E : PS/2 KEYBOARD PORT
- F : USB 1 PORT
- G : COM1 PORT
- H : COM2 PORT
- I : LINE / SPEAKER OUT
- J : LINE IN
- K : MICROPHONE

## 2-6.3 ATX POWER SUPPLY CONNECTOR

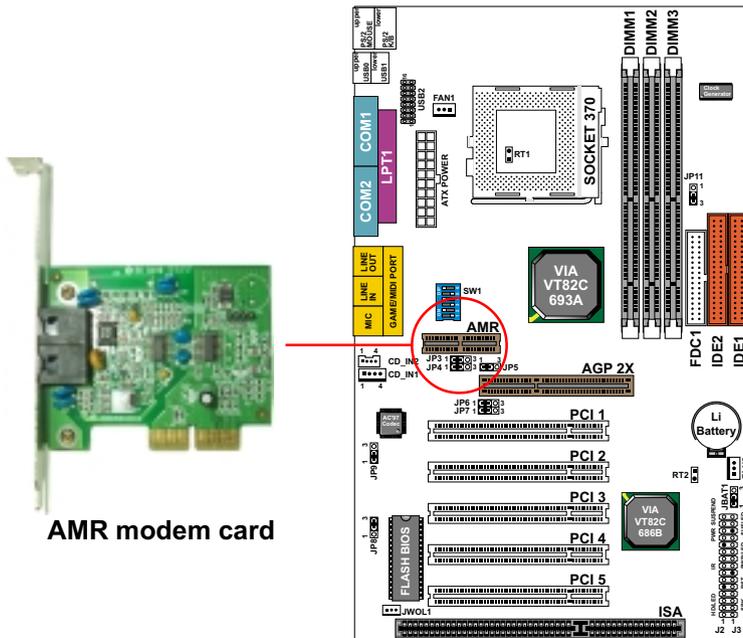
- This connector connects to an ATX power supply. The plug from the power supply only inserts in an orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that all pins are aligned.
- Reminding that your power supply should support at least 10mA on the 5V standby voltage. It may cause an difficulty to power on the system if the power supply cant support the load.
- **For Wake On LAN function, the power supply should support at least 720mA current.**



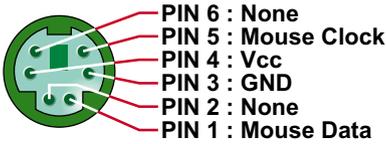
## 2-6.4 AUDIO MODEM RISER SLOT (AMR)

The slot is a new open industry-standard specification for Audio/Modem solution, which use the AC'97 interface as the connection between the riser and the motherboard. Then specification main objective is to reduce the baseline implementation cost of audio and modem. The motherboard uses the primary channel for the on-board AC'97 code, so for using AMR modem card on the motherboard, the AMR modem card must be secondary.

**Note:** AMR modem card is not include with the motherboard.



## 2-6.5 PS/2 MOUSE AND PS/2 KEYBOARD



**PS/2 MOUSE**



**PS/2 KEYBOARD**

## 2-6.6 IRQ DESCRIPTION

IRQ	Function Description	Priority
IRQ 0	System Timer	1
IRQ 1	Keyboard Controller	2
IRQ 2	Programmable Interrupt	N/A
IRQ 3	Serial Port (COM 2)	11
IRQ 4	Serial Port (COM 1)	12
IRQ 5		13
IRQ 6	Floppy Disk Controller	14
IRQ 7	Parallel Port (LPT1)	15
IRQ 8	Real Time Clock (RTC)	3
IRQ 9		4
IRQ 10		5
IRQ 11		6
IRQ 12	PS/2 Mouse Port	7
IRQ 13	Coprocessor	8
IRQ 14	Primary IDE Channel	9
IRQ 15	Secondary IDE Channel	10

- Both ISA and PCI expansion cards may require IRQs. System IRQs are available to cards installed in the ISA expansion bus first, then any remaining IRQs are available to PCI cards. Currently, there are two types of ISA cards.
- The original ISA expansion card design, now referred to as “Legacy” ISA

card, requires that you configurate the card's jumpers manually and then install it in any available slot on the ISA bus. To see a map of your used and free IRQs in Windows 98, the *Control Panel* in *My Computer*, contains a *System* icon, which gives you a *Device Manager* tab. Double-Clicking on a specific hardware device gives you a *Resources* tab which shows the Interrupt number and address. Double-Clicking *Computers* to see all the interrupts and addresses for your system. Make sure that no two devices use the same IRQ or your computer will experience problems when those two devices are in use at the same time.

# CHAPTER 3

## SOFTWARE SETUP

### 3-1 ABOUT SOLTEK SUPPORT CD

- In Soltek support CD, it contains most informations for user's requirement, such as Acrobat Reader, BIOS, User's Manual, Driver, Hardware Monitor (if motherboard supports this function), Patch, and Utility etc., User can browse the CD and get further details in regard of our motherboard. Of course, welcome to vendor's website for the newest release.

### 3-2 VIA CHIPSET DRIVER INSTALLATION (4-IN-1 DRIVER)

Step 1:

- Please put the Support CD attached to motherboard into the CD-ROM drive.
- When appears a welcome window as left screen, then user should choose "**Install Driver**".

Step 2:

- Click on the "**VIA Chipsets Driver**".

Step 3:

- Click on the "**4-in-1 driver**".

Step 4:

- Click on the "**Install VIA 4-in-1 driver**" to continue.



Step 5:

- Press Next button to continue.



Step 6:

- Click “**Yes**” to continue.



Step 7:

- Press select the checkbox as below:
  - Bus Master PCI IDE Driver
  - AGP VxD Driver
  - VIA Chipset Function's Registry
  - IRQ Routing Miniport Driver

Note: For user who are upgrading VIA Drivers. We recommend installing the 4-in-1 as it will automatically detect and update the necessary drivers.



Step 8:

- Click “**Install**” and Press Next button to continue.



Step 9:

- We recommend user to leave “**Enable / Disable [Ultra] DMA**” checkbox empty.

Note: Whether select this item or not, user needs to enable the Hard Disk DMA function in Control Panel manually. (For further details, please refer to next page)



Step 10:

- The default setup destination is C:\VIADMATool, press Next button to continue.



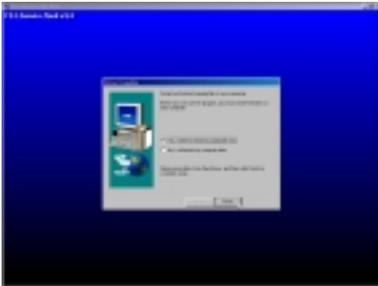
Step 11:

- Press Next button to continue.



Step 12:

- Select “**Install VIA AGP VxD**” in turbo mode and press Next button to continue.



Step 13:

- After all the setup process is finished, please restart your computer by clicking on Finish.

## **A**bout Hard Disk DMA Function

Last but not least, user must enable the Hard Disk DMA function. The process is below:

1. [Start] [Setting] [Control Panel] [System] [Device Manager].
2. In Device Manager, select [Disk Drivers] [GENERIC IDE TYPEXX].
3. Select [Properties] for GENERIC IDE TYPEXX.
4. In Properties, select [Settings].
5. In Option item, select the DMA checkbox.
6. Restart your computer.

### 3-3 AC'97 AUDIO CODEC INSTALLATION

Step 1:

- Please put the Support CD attached to motherboard into the CD-ROM drive.
- When appears a welcome window as left screen, then user should choose “**Install Driver**”.

Step 2:

- Click on the “**VIA Chipsets Driver**”.

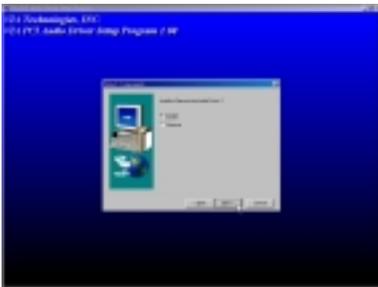
Step 3:

- Click on the “**AC'97 driver**”.



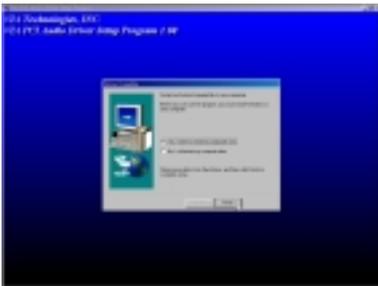
Step 4:

- Press Next button to continue.



Step 5:

- When asking you install or remove the audio driver, please select “**Install**” and press Next button to continue.



Step 6:

- It's recommended for user to restart the computer after the audio driver is finished. Please select “**Yes, I want to restart my computer now**”.

### 3-4 HARDWARE MONITOR INSTALLATION

Step 1:

- Please put the Support CD attached to motherboard into the CD-ROM drive.
- When appears a welcome window as left screen, then user should choose “**Install Driver**”.

Step 2:

- Click on the “**VIA Chipsets Driver**”.

Step 3:

- Click on the “**Hardware Monitor Utility**”.



Step 4:

- Press **Next** button to continue.



Step 5:

- The default destination is **C:\VIAhm**, then press **Next** button to continue.



Step 6:

- Press **Next** button to finish the Hardware Monitor setup process.

# CHAPTER 4

## BIOS SETUP

### 4-1 INTRODUCE THE BIOS

- BIOS stands for Basic Input Output System. It is sometimes called ROM BIOS because it is stored in a Read-Only Memory(ROM) chip on the motherboard. BIOS is the first program to run when you turn on your computer.
- BIOS performs the following functions:
  1. Initializing and testing hardware in your computer (a process called "POST", for Power On Self Test).
  2. Loading and running your operating system.
  3. Helping your operating system and application programs to manage your PC hardware by means of a set of routines called BIOS Run-Time Service.

### 4-2 WHAT IS BIOS SETUP

- Setup is an interactive BIOS program that you need to run when:
  1. Changing the hardware on your system. (For example: installing a new Hard Disk etc.)
  2. Modifying the behavior of your computer. (For example: changing the system time or date, or turning special features on or off etc.)
  3. Enhancing your computer's behavior. (For example: speeding up performance by turning on shadowing or caching)

### 4-3 HOW TO RUN BIOS SETUP

- One way of running SETUP is to press a special function key or key combination during POST, before the operating system is loaded during POST, the BIOS usually displays a prompt such as:

Press DEL to enter SETUP

## 4-4 WHAT IS CMOS

- CMOS is a special kind of memory maintained by a battery after you turn your computer off. The BIOS uses CMOS to store the settings you selected in SETUP. The CMOS also maintains the internal clock. Every time you turn on your computer, the BIOS Looks in CMOS for the settings you selected and configures your computer accordingly. If the battery charge runs too low, the CMOS content will be lost and POST will issue a “CMOS invalid” or “CMOS checksum invalid” message. If this happens, you may have to replace the battery. After the battery is replaced, the proper settings will need to be stored in SETUP.

## 4-5 WHAT IS POST

- POST is an acronym for Power On Self Test. It's a traditional name for the routines that the BIOS uses to test and initializes the devices on your system when the PC is powered on. Its meanings has grown to include anything the BIOS does before the operating system is started. Each of POST routines is assigned a POST code, an unique number which is sent to I/O port 080h before the routine is executed.

## 4-6 BIOS UPGRADE

- Motherboards incorporate the system BIOS in a Flash memory component. Flash BIOS allows user upgrades without the need to replace an EPROM component.
- The upgrade utility fits on a floppy diskette and provides the capability to save, verify, and update the system BIOS. The upgrade utility can be run from a hard disk drive or a network drive, but no memory managers can be installed during upgrades.

### 4-6.1 BEFORE UPGRADE BIOS

- It is recommended that you save a copy of the original motherboard BIOS along with a Flash EPROM Programming utility (AWDFLASH.EXE) to a bootable floppy disk in case you need to reinstall the BIOS later.

## 4-6.2 UPGRADE PROCESS

Note: Normally, to upgrade BIOS that is unnecessary if the system is working fine without any problem, user should upgrade the BIOS unless you experienced incompatible problem or need BIOS upgrade to create new features. However, please read all information in this section before upgrading.

“AWDFLASH.EXE” is a Flash EPROM Programming utility that updates the BIOS by uploading a new BIOS file to the programmable flash ROM on the motherboard, This program only works in *pure DOS environment, the utility can not be worked in win95/98, ME, NT or WINDOWS 2000 environment.*

### Upgrading the system BIOS

Set 1. Please visit the board maker’s website, download the newest BIOS file and newest award flash utility “AWDFLASH.ESE” for the motherboard. The BIOS file you downloaded will be a \*.bin format.

Step 2. Create a bootable diskette. Then copy the BIOS file and award flash utility “AWDFLASH.EXE” into the diskette.

Step 3. Insert the diskette into drive A, reboot your system and boot from the diskette.

Step 4. When booting is finished type **awdf flash \*.bin/sn/py/cc** and then press <Enter> to run BIOS upgrade program. (\*.bin depends on your motherboard model and version code).

Step 5. After upgraded, please press <F1> or <F10> to exit or reset your system, **Warning !** If there appears **Write Fail** while Award “FLASH MEMORY WRITER” verifying Flash memory, just repeat the process, please DO NOT reset or turn off the system. If the award memory flash utility was not able to update the BIOS successfully, your system may not be able to boot up,

Step 6. You will see a message “CMOS checksum error-Default loaded” during booting the system. Please press <Del> to run CMOS setup utility, then reload “LOAD SETUP DEFAULTS” or “**Load Optimized Defaults**” and save this change.

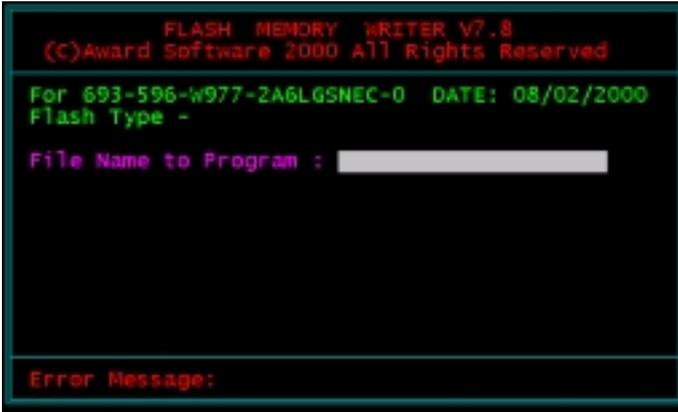


Figure 1 : Award Flash Memory Writer Start Screen

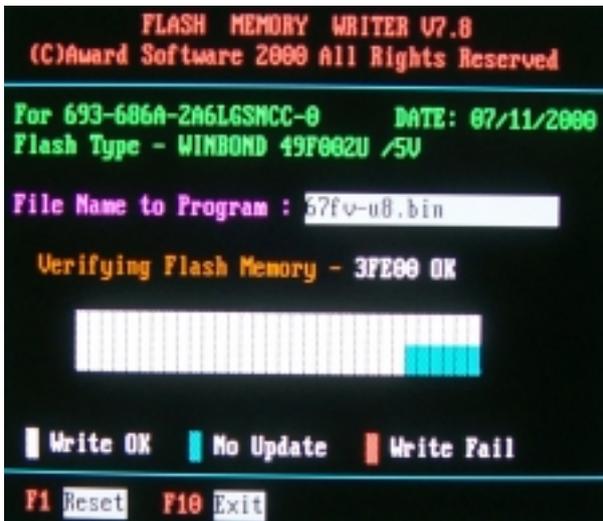


Figure2 : Award Flash Memory Writer Complete Screen

The parameters of AWDFLASH.EXE

/sn: No original BIOS backup

/py: Program flash memory

/cc: Clear CMOS data after programming

/r : Reset system after programming

**NOTE:** User can type AWDFLASH /? to get further details about parameters. Wrong usage of parameter will damage the BIOS information, so that we strongly recommend user to leave parameters away unless you realize their function.

## 4-7 CMOS SETUP UTILITY

- This motherboard comes with the AWARD BIOS from AWARD Software Inc. Enter the CMOS SETUP UTILITY Main Menu by:

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

**PRESS <DEL> TO ENTER SETUP**

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

**CMOS Setup Utility - Copyright (C) 1984 - 2000 Award Software**

<ul style="list-style-type: none"> <li>▶ Standard CMOS Features</li> <li>▶ Advanced BIOS Features</li> <li>▶ Advanced Chipset Features</li> <li>▶ Integrated Peripherals</li> <li>▶ Power Management Setup</li> <li>▶ PnP/PCI Configurations</li> <li>▶ PC Health Status</li> </ul>	<ul style="list-style-type: none"> <li>▶ Frequency Control</li> <li>Load Optimized Defaults</li> <li>Set Supervisor Password</li> <li>Set User Password</li> <li>SAVE &amp; EXIT SETUP</li> <li>EXIT WITHOUT SAVING</li> </ul>
<p>Esc : Quit F10 : Save &amp; Exit Setup</p>	<p>↑↓→← : Select Item (Shift) F2 : Change Color</p>
<b>Time, Date, Hard Disk Type...</b>	

3. Using the arrows on your keyboard, select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
4. You may return to the Main Menu anytime by pressing <ESC>.
5. 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.

## 4-8 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 "STANDARD CMOS SETUP" from the Main Menu and a screen with a list of option will appear:

### CMOS Setup Utility - Copyright (C) 1984-2000 Award Software Standard CMOS Features

Date (mm:dd:yy)	Wed, Nov 22 2000	Item Help
Time (hh:mm:ss)	17 : 11 : 15	Menu Level ▶
▶ IDE Primary Master	Press Enter 13022 MB	
▶ IDE Primary Slave	Press Enter None	
▶ IDE Secondary Master	Press Enter None	
▶ IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	65472K	
Total Memory	1024K	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help  
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

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)** The BIOS determines the day of the week from the other date information. This field is for information only.  
Press the left or right arrow key to move to the desired field (date, month, year). Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.
- Time (hh:mm:ss)** The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the left or right arrow key to move to desired field. Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.
- Primary / Secondary Master / Slave** This field records the specifications for all non-SCSI 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) installed in your system. The choices are:  
360KB, 5.25in.,  
1.2MB, 5.25in.,  
720KB, 3.5in.,  
1.44MB, 3.5in.,  
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.

**CMOS Setup Utility - Copyright (C) 1984-2000 Award Software  
IDE Primary Master**

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	Menu Level ▶▶
Access Mode	Auto	
Capacity	10243 MB	
Cylinder	19846	
Head	16	
Precomp	65535	
Landing Zone	19845	
Sector	63	

↑↓ → ←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help  
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

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

## 4-9 ADVANCED BIOS FEATURES

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

Run the ADVANCED BIOS FEATURES as following:

1. Choose "ADVANCED BIOS FEATURES" from the Main Menu and a screen with a list of option will appear:
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.

**CMOS Setup Utility - Copyright (C) 1984-2000 Award Software  
Advanced BIOS Features**

Virus Warning	Disabled	Item Help
CPU Internal Cache	Enabled	Menu Level ▶
External Cache	Enabled	
CPU L2 Cache ECC Checking	Enabled	
Process or Number Feature	Disabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	CDROM	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Disabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
× Typematic Rate (Chars/Sec)	6	
× Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Video BIOS Shadow	Enabled	
C8000-CBFFF Shadow	Disabled	
CC000-CFFFF Shadow	Disabled	
D0000-D3FFF Shadow	Disabled	
D4000-D7FFF Shadow	Disabled	
D8000-DBFFF Shadow	Disabled	
DC000-DFFFF Shadow	Disabled	

↑ ↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help  
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

- 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** Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU.
- The External Cache field may not appear if your system does not have external cache memory.
- External Cache** Choose Enabled or Disabled. This option allows you to enable or disable the external cache.
- CPU L2 Cache ECC Checking** When you select *Enabled*, memory checking is enabled when the external cache contains ECC SRAMs. The choice: Enabled, Disabled.
- Process or Number Feature** The choice: Enabled, Disabled.
- Quick Power On Self Test** Select *Enabled* to reduce the amount of time required to run the power-on self -test (POST). A quick POST skips certain steps. We recommend that you normally disable quick POST. Better to find a problem during POST than lost data during your work.

- First/Second/Third/Other Boot Device** The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The choice: Floppy, LS/ZIP, HDD, SCSI, CDROM, Disabled.
- Swap Floppy Drive** This field is effective only in systems with two floppy drives. Selecting Enabled assigns physical drive B logical drive A, and physical drive A to logical drive B.
- Boot Up Floppy Seek** Enabled: 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** Toggle between On or Off to control the state of the NumLock key when the system boots. When toggled On, the numeric keypad generates numbers instead of controlling cursor operations.
- Gate A20 Option** Gate A20 refers to the way the system addresses memory above 1 MB (extended memory). When set to *Fast*, the system chipset controls Gate A20. When set to *Normal*, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows.
- Typematic Rate Setting** When *Disabled*, the following two items (Typematic Rate and Typematic Delay) are irrelevant. Keystroke repeat at a rate determined by the keyboard controller in your system.  
When *Enabled*, you can select a typematic rate and typematic delay.
- Typematic Rate (Chars / Sec)** Range between 6 and 30 characters per second. This option controls the speed of repeating keystrokes.

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

**Security Option** If you have set a password, select whether the password is required every time the System boots, or only when you enter setup.

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

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

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

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

## 4-10 ADVANCED CHIPSET FEATURES

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

Run the ADVANCED CHIPSET FEATURES as following:

1. Choose "ADVANCED CHIPSET FEATURES" from the Main Menu and a screen with a list of option will appear:
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.

**CMOS Setup Utility - Copyright (C) 1984-2000 Award Software  
Advanced Chipset Features**

		Item Help
		Menu Level ▶
Bank 0/1 DRAM Timing	SDRAM 10ns	
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	Disabled	
Concurrent PCI/Host	Disabled	
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
AGP Aperture Size	64M	
AGP 2X Mode	Enabled	
CPU to PCI Write Buffer	Enabled	
PCI Dynamic Bursting	Disabled	
PCI Master 0 WS Write	Enabled	
PCI Delay Transaction	Enabled	
PCI#2 Access #1 Retry	Enabled	
AGP Master 1 WS Write	Disabled	
AGP Master 1 WS Read	Disabled	
USB Keyboard Support	Disabled	
OnChip Sound	Enabled	
OnChip Modem	Disabled	
OnChip USB	Enabled	

↑ ↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help  
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

**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: SDRAM 8/10ns,  
Normal,  
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.

**DRAM Clock** This item allows you to control the DRAM speed. The choice: Host Clock, HCLK+33M, HCLK-33M.

**Memory Hole** In order to improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory space below 16MB. The choice: 15M-16M, Disabled.

**Read Around Write** DRAM optimization feature: If a memory read is addressed to a location whose latest write is 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.

**Concurrent PCI/Host** Please leave it at default setting

**System BIOS Cacheable** Choose Enabled or Disabled. When enabled, the access to the system BIOS ROM addressed at F0000H - FFFFFH is cached.

**Video RAM Cacheable** Choose Enabled or Disabled. When enabled, the access to the VGA RAM addressed is cached.

**AGP Aperture Size** Choose 4, 8, 16, 32, 64, 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 mode.

**CPU to PCI Write Buffer** When this field is Enabled, writes from the CPU to the PCI bus are buffered, to compensate for the speed differences between the CPU and the PCI bus. When Disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another write cycle.  
The choice: Enabled, Disabled.

**PCI Dynamic Bursting** When Enabled, every write transaction goes to the write buffer. Bursting transactions then burst on the PCI bus and non-bursting transactions don't.  
The choice: Enabled, Disabled.

**PCI Master 0 WS Write** When Enabled, writes to the PCI bus are executed with zero wait states.  
The choice: Enabled, Disabled.

**PCI Delay Transaction** Leave this field at default

**PCI #2 Access #1 Retry** Leave this field at default

**AGP Master 1 ws write** Leave this field at default

**AGP Master 1 ws read** Leave this field at default

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

**OnChip Modem** Select Enabled to use the on-chip Modem capability of your system. This field must be Disabled, if there is NO AMR modem card installed.

**OnChip Sound** Select Enabled to use the on-chip Audio capability of your system. Most of the following field do not appear when this field is Disabled, for user who wants to use another sound card, this field must be Disabled.

**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 equipped, if you add a higher performance controller, you will need to disable this feature. The choice: Enabled, Disabled.

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

## 4-11 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:

### CMOS Setup Utility - Copyright (C) 1984-2000 Award Software Integrated Peripherals

		Item Help
On-Chip IDE Channel 0	Enabled	Menu Level ▶
On-Chip IDE Channel 1	Enabled	
IDE Prefetch Mode	Enabled	
Primary Master PIO	Auto	
Primary Slave PIO	Auto	
Secondary Master PIO	Auto	
Secondary Slave PIO	Auto	
Primary Master UDMA	Auto	
Primary Slave UDMA	Auto	
Secondary Master UDMA	Auto	
Secondary Slave UDMA	Auto	
Init Display First	PCI Slot	
IDE HDD Block Mode	Enabled	
Onboard FDD Controller	Enabled	
Onboard Serial Port 1	Auto	
Onboard Serial Port 2	Auto	
UART 2 Mode	Standard	
× IR Function Duplex	Half	
× TX, RX inverting enable	No, Yes	
Onboard Parallel Port	378/IRQ7	
Onboard Parallel Mode	Normal	
ECP Mode Use DMA	3	
Parallel Port EPP Type	EPP1.9	
Onboard Legacy Audio	Enabled	
Sound Blaster	Disabled	
SB I/O Base Address	220H	
SB IRQ Select	IRQ 5	
SB DMA Select	DMA 1	
MPU-401	Disabled	
MPU-401 I/O Address	330-333H	
Game Port (200-207H)	Enabled	

↑ ↓ → ← : Move Enter: Select +/- /PU/PD: Value F10: Save ESC: Exit F1: General Help  
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized 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.

**On-Chip Primary/  
Secondary PCI IDE** 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, 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.

**Primary** Choose Auto or Mode 0~4. The BIOS will detect the  
**Master / Slave PIO** HDD mode type automatically when you choose Auto.  
**Secondary** You need to set to a lower mode than Auto when your  
**Master / Slave PIO** hard disk becomes unstable.  
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.  
The choice: Auto, Disabled.
- Secondary Master / Slave UDMA** This option allows you to decide to activate PCI Slot or AGP first.  
The choice: PCI Slot, AGP.
- IDE HDD Block Mode** Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support.  
The choice: Enabled, Disabled.
- 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 enabled** 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", "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.
- Onboard 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.
- Parallel Port EPP Type** 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.

## 4-12 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:

### CMOS Setup Utility - Copyright (C) 1984-2000 Award Software Power Management Setup

ACPI Function	Enabled	Item Help
▶ Power Management	Press Enter	Menu Level ▶
PM Control by APM	Yes	
Video Off Option	Suspend → Off	
Video Off Method	V/H SYNC+Blank	
MODEM Use IRQ	3	
Doze Mode	Disable	
Soft-Off by PWRBTN	Instand-Off	
State After Power Failure	Auto	
▶ Wake Up Events	Press Enter	

↑ ↓ → ←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help  
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized 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.

**ACPI Function** Select Enabled only if your computer's operating system supports the Advanced Configuration and Power Interface (ACPI) specification. Currently, Windows NT 5.0 support ACPI.

**CMOS Setup Utility - Copyright (C) 1984-2000 Award Software  
Power Management**

<b>Power Management</b>	<b>User Define</b>	<b>Item Help</b>
<b>HDD Power Down</b>	<b>Disable</b>	<b>Menu Level ▶</b>
<b>Doze Mode</b>	<b>Disable</b>	
<b>Suspend Mode</b>	<b>Disable</b>	

↑ ↓ → ← : Move Enter: Select +/- /PU/PD: Value F10: Save ESC: Exit F1: General Help  
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

**Power Management** This option allows you to select the type (or degree) of power saving for Doze, Standby, and Suspend modes.

This table describes each power management mode:

<b>Max Saving</b>	Maximum power savings. Only Available for SL CPUs. Inactivity period is 1 minute in each mode.
<b>User Define</b>	Set each mode individually. Select time-out periods in the section for each mode, below.
<b>Min Saving</b>	Minimum power savings. Inactivity period is 1 hour in each mode (except the hard drive).

**HDD Power Down** When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

**Doze Mode** When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

**Suspend Mode** After the selected period of system inactivity, the chipset enters a hardware suspend mode, stopping the CPU clock and possibly causing other system devices to enter power management modes.

**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 Option** When enabled, this feature allows the VGA adapter to operate in a power saving mode.

<b>Always On</b>	Monitor will remain on during power saving modes.
<b>Suspend --&gt; Off</b>	Monitor blanked when the systems enters the Suspend mode.
<b>Susp, Stby --&gt; Off</b>	Monitor blanked when the system enters either Suspend or Standby modes.

**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.

**MODEM Use IRQ** Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.  
The choice: 3, 4, 5, 7, 9, 10, 11, NA.

**Soft-Off by PWRBTN** Instant-Off : Turn off the system power 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)

**State After Power Failure** This field lets you determine the state that your PC returns to after a power failure.  
The choice: On, Off, Auto

**CMOS Setup Utility - Copyright (C) 1984-2000 Award Software**  
**Wake Up Events**

<b>VGA</b>	<b>OFF</b>	<b>Item Help</b>
<b>LPT &amp; COM</b>	<b>LPT/COM</b>	<b>Menu Level ▶</b>
<b>HDD &amp; FDD</b>	<b>ON</b>	
<b>PCI Master</b>	<b>OFF</b>	
<b>Modem Ring Resume</b>	<b>Disabled</b>	
<b>RTC Alarm Resume</b>	<b>Disabled</b>	
× <b>Date (of Month)</b>	<b>0</b>	
× <b>Resume Time (hh:mm:ss)</b>	<b>0 0 0</b>	
<b>IRQS Activity Monitoring</b>	<b>Press Enter</b>	

↑ ↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help  
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

**VGA** When Enabled, you can set the VGA awakens the system

**LPT & COM** When On of LPT & COM, any activity from one of the listed system peripheral devices or IRQs wakes up the system.

**HDD & FDD** When On of HDD & FDD, any activity from one of the listed system peripheral devices wakes up the system.

**PCI Master** When On of PCI Master, any activity from one of the listed system peripheral devices wakes up the system.

**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, 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.

**Resume 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.

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.

**CMOS Setup Utility - Copyright (C) 1984-2000 Award Software  
IRQ Activity Monitoring**

Primary INTR	ON	Item Help
IRQ 3 (COM2)	Primary	Menu Level ▶
IRQ 4 (COM1)	Primary	
IRQ 5 (LPT2)	Primary	
IRQ 6 (Floppy Disk)	Primary	
IRQ 7 (LPT1)	Primary	
IRQ 8 (RTC Alarm)	Disabled	
IRQ 9 (IRQ2 Redir)	Secondary	
IRQ 10 (Reserved)	Secondary	
IRQ 11 (Reserved)	Secondary	
IRQ 12 (PS/2 Mouse)	Primary	
IRQ 13 (Coprocessor)	Disabled	
IRQ 14 (Hard Disk)	Primary	
IRQ 15 (Reserved)	Disabled	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help  
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

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

## 4-13 PNP / PCI CONFIGURATION

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

Run the PNP/PCI CONFIGURATION as following:

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

**CMOS Setup Utility - Copyright (C) 1984-2000 Award Software  
PnP/PCI Configurations**

<b>PNP OS Installed</b>	<b>No</b>	<b>Item Help</b> Menu Level ▶
<b>Reset Configuration Data</b>	<b>Disabled</b>	
<b>Resources Controlled By</b>	<b>Auto(ESCD)</b>	
× <b>IRQ Resources</b>	<b>Press Enter</b>	
× <b>DMA Resources</b>	<b>Press Enter</b>	
<b>PCI/VGA Palette Snoop</b>	<b>Disabled</b>	
<b>Assign IRQ For VGA</b>	<b>Enabled</b>	
<b>Assign IRQ For USB</b>	<b>Enabled</b>	

↑ ↓ → ← : Move Enter : Select +/- / PU / PD : Value F10 : Save ESC : Exit F1 : General Help  
F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized 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.

**PNP OS Installed** Select Yes if the system operating environment is Plug-and Play aware (e.g., Windows 95).

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

**Reset Configuration Data** Normally, you leave this *Disabled*. Select *Enabled* to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

**Resource Controlled By** The plug and play AwardBIOS can automatically configure all the boot and play-compatible devices. If you select *Auto*, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

**IRQ Resources** Press Enter. Please refer to the below list.

**CMOS Setup Utility - Copyright (C) 1984-2000 Award Software  
IRQ Resources**

IRQ-3 assigned to	PCI/ISA PnP	<b>Item Help</b> Menu Level ▶
IRQ-4 assigned to	PCI/ISA PnP	
IRQ-5 assigned to	PCI/ISA PnP	
IRQ-7 assigned to	PCI/ISA PnP	
IRQ-9 assigned to	PCI/ISA PnP	
IRQ-10 assigned to	PCI/ISA PnP	
IRQ-11 assigned to	PCI/ISA PnP	
IRQ-12 assigned to	PCI/ISA PnP	
IRQ-14 assigned to	PCI/ISA PnP	
IRQ-15 assigned to	PCI/ISA PnP	

↑ ↓ → ←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help  
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

**DMA Resources** Press Enter. Please refer to the below list.

**CMOS Setup Utility - Copyright (C) 1984-2000 Award Software  
DMA Resources**

DMA-0 assigned to	PCI/ISA PnP	Item Help
DMA-1 assigned to	PCI/ISA PnP	Menu Level ▶
DMA-3 assigned to	PCI/ISA PnP	
DMA-5 assigned to	PCI/ISA PnP	
DMA-6 assigned to	PCI/ISA PnP	
DMA-7 assigned to	PCI/ISA PnP	

↑ ↓ → ←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help  
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

**PCI/VGA Palette Snoop** Leave this field at Disabled.  
The choice: Enabled, Disabled.

**Assign IRQ for VGA** Enabled: 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)

**Assign IRQ for USB** Enabled: 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)

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

## 4-14 PC HEALTH STATUS

- This section helps you to get more information about your system including CPU temperature, FAN speed and voltage. It is recommended that you contact with your motherboard supplier to get proper value about your setting of the CPU temperature.

### CMOS Setup Utility - Copyright (C) 1984-2000 Award Software PC Health Status

<b>Current CPU Temp</b>	<b>Item Help</b>
<b>Current System Temp</b>	<b>Menu Level ▶</b>
<b>Current CPUFAN1 Speed</b>	
<b>Current CPUFAN2 Speed</b>	
<b>Vcore</b>	
<b>2.5V</b>	
<b>3.3V</b>	
<b>5V</b>	
<b>12V</b>	

↑ ↓ → ←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help  
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

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

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

**Current CPU FAN1 Speed** Shows current CPU FAN1 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)

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

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

## 4-15 FREQUENCY/VOLTAGE CONTROL

### CMOS Setup Utility - Copyright (C) 1984-2000 Award Software Frequency Control

Auto Detect DIMM/PCI CLK	Disabled	Item Help
Spread Spectrum	Disabled	Menu Level ▶
CPU Host Clock (CPU/PCI)	Default	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help  
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

**Auto Detect DIMM/PCI CLK** This item allows you to enable/disable detect DIMM/PCI Clock.

The choice: Enabled, Disabled.

**Spread Spectrum Modulated** This item allows you to enable/disable the spread spectrum modulate.

The choice: Enabled, Disabled.

**CPU Host Clock (CPU/PCI)** This item allows you to select CPU/PCI frequency.  
The choice: Default, 100/33MHz, 103/34MHz, 105/35MHz, 112/37MHz, 115/38MHz, 120/40MHz, 124/41MHz.

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

## 4-16 LOAD OPTIMIZED DEFAULTS

- When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

`" Load Optimized Defaults (Y / N) ? N "`

Pressing "Y" loads the BIOS default values that are factory settings for optimal performance system operations.

## 4-17 SET 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 or 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 informations will be lost and you need to run the BIOS setup program again.*

## 4-18 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.

## 4-19 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:

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

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