

VIAKLE-133 Chipset  
Main Board  
User's Manual

Document number:VIAKLE-133-E-017LS

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# Chapter 1 Introduction

## **Introduction**

The introduction contains information on the main specifications for the VIAKLE-133 motherboard, the package contents and cautionary notes.

## **Hardware Installation**

The Hardware Installation section is the most important in the manual. It describes in detail how to set the motherboard up for operation. Read all information and follow all steps, especially if you are a new user.

## **Software Installation**

The software section describes the drivers that need be installed to make your OS operate properly. The drivers are provided on the driver CD.

## **BIOS Setup**

Information on how to enter the BIOS setup and change settings is given here. In addition all individual BIOS items are described. Although some BIOS Setting information is given in the hardware installation section where appropriate, refer to the BIOS Setup Section for details.

## **Trouble Shooting**

In the case you run into trouble using your motherboard, this section will provide you with much information and practical tips to help you solve your problem. Some of the tips are also given in the Hardware and Software Installation Sections where relevant.

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## 1-1 Specifications

- **PCB Board size** : 24.5cm(L) x 22cm(W), m-ATX form factor.

- **CPU**: The following Socket 462-based AMD™ CPUs are supported:

Athlon™ (600, 650, 700, 750, 800, 850, 900, 950, 1000, 1100, 1200, 1300, 1333, 1400 MHz)

Duron™ (850 and 800, 750 and 700MHz)



*CPU is not enclosed in the package.*

- The VIAKLE-133 comes equipped with two Dual Inline Memory Module (DIMM) sockets to support Intel PC133/PC100-compliant (8, 16, 32, 64, 128, 256, or 512MB) DIMM modules up to 1GB. In addition NECs VC133-compliant Virtual Channel (VC) SDRAM is also supported. (VC SDRAM is a new DRAM architecture that greatly improves the system memory ability to service high multimedia requirements.)

- **Expansion Slot** : 3 x PCI slots.

- **Infrared (IrDA) Connector**: The IrDA connector supports an optional IR remote control device for wireless interfacing with external peripherals, personal gadgets, or an optional remote controller.

- **Other features**

- Windows 95/98 power off
- PC Status Monitoring
- Wake-On-LAN and Wake-On-Modem
- Color-coded Connectors
- ISM Function

---

## 1-2 Notice of Hardware Installation

Before installing the main board hardware, please note the following things.

### A. Check the package

If any of the below items is missing or damaged, contact the dealer from whom you purchase. Leave this main board in its original package until you are ready to install it. In the package, there are:

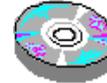
- The VIAKLE-133 Motherboard



- VIAKLE-133 User's Manual



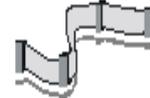
- Driver Installation CD-ROM



- IDE ATA 66/100 Flat-Cable



- Floppy Disk Drive Flat-Cable



### B. Make sure power is off.

During hardware installation, be sure that there is no power connected in this period.

### C. Avoid ESD (Electrical Static Discharge)

While working with this main board, always wear a grounded wristband or ankle strap to avoid ESD (Electrical Static Discharge).

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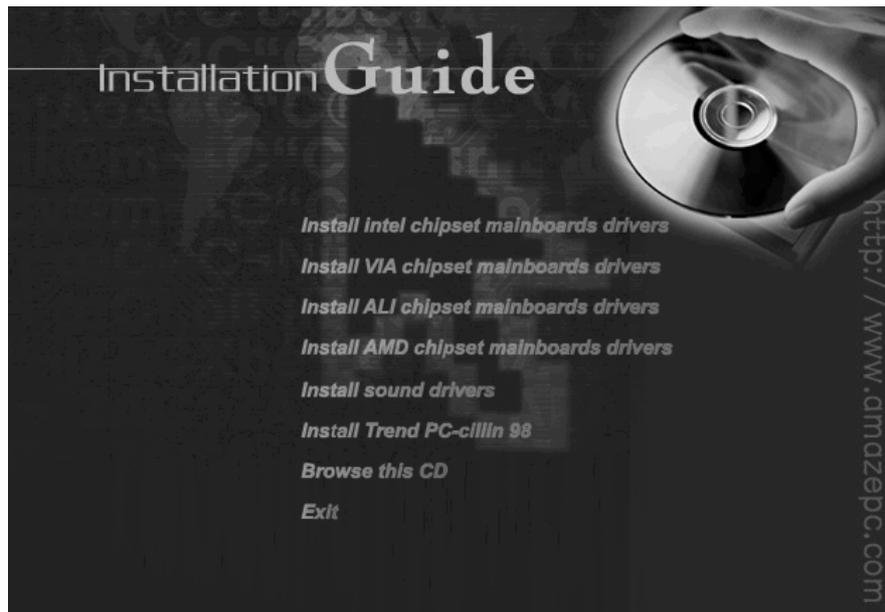
## 1-3 Notice of CD Driver Installation

This CD contains the following drivers.



CD driver is always updated with the latest version, and thus the actual CD content may be different from the above picture.

1. **Main boards:** VIA KLE-133,694V100 etc, INTEL 815E,815EP etc. .



Insert the Support CD that Came with motherboard into your CD-ROM drive. If the menu does not appear, double-click the CD drive icon in MY Computer or run E:\SETUP.EXE (assuming that your CD-ROM driver E:) to bring up the setup screen.

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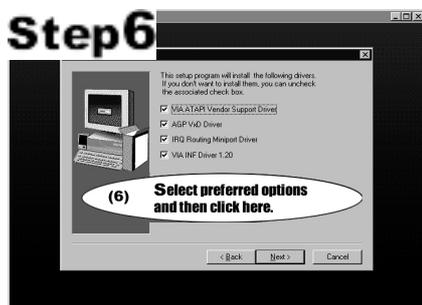
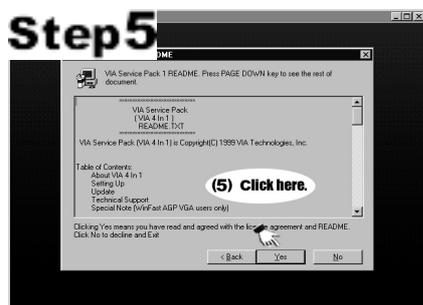
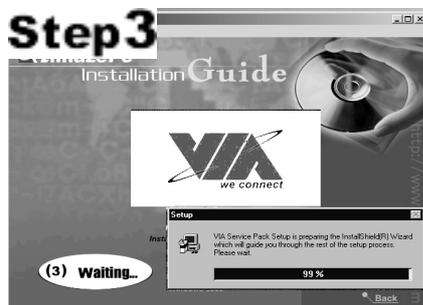
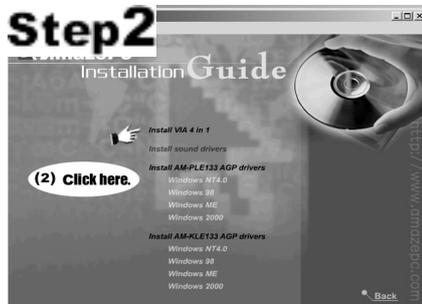
## **1-4 Software Driver Installation**

Notice of the setup screen :

- "Install intel chipset mainboard drivers"
- "Install VIA chipset mainboard drivers"
- "Install ALI chipset mainboards drivers"
- "Install AMD chipset mainboards drivers"
- "Install sound drivers"
- "Install Trend PC-cillin 98"
- "Browse this CD"
- "Exit"

## **1-5 Motherboard Driver Installation**

Insert the Support CD that Came with motherboard into your CD-ROM drive or double-click the CD drive icon in MY Computer or run E:\SETUP.EXE (assuming that your CD-ROM driver E:)



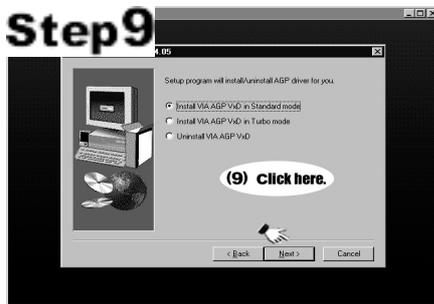
## Step 7



## Step 8



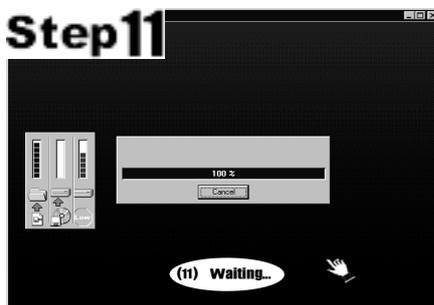
## Step 9



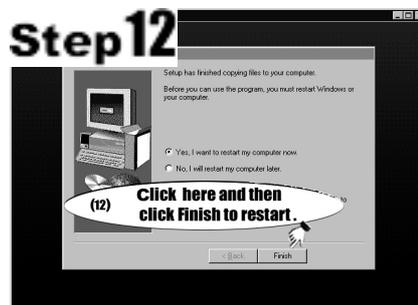
## Step 10



## Step 11



## Step 12



## 1-6 Installation Sound Drivers

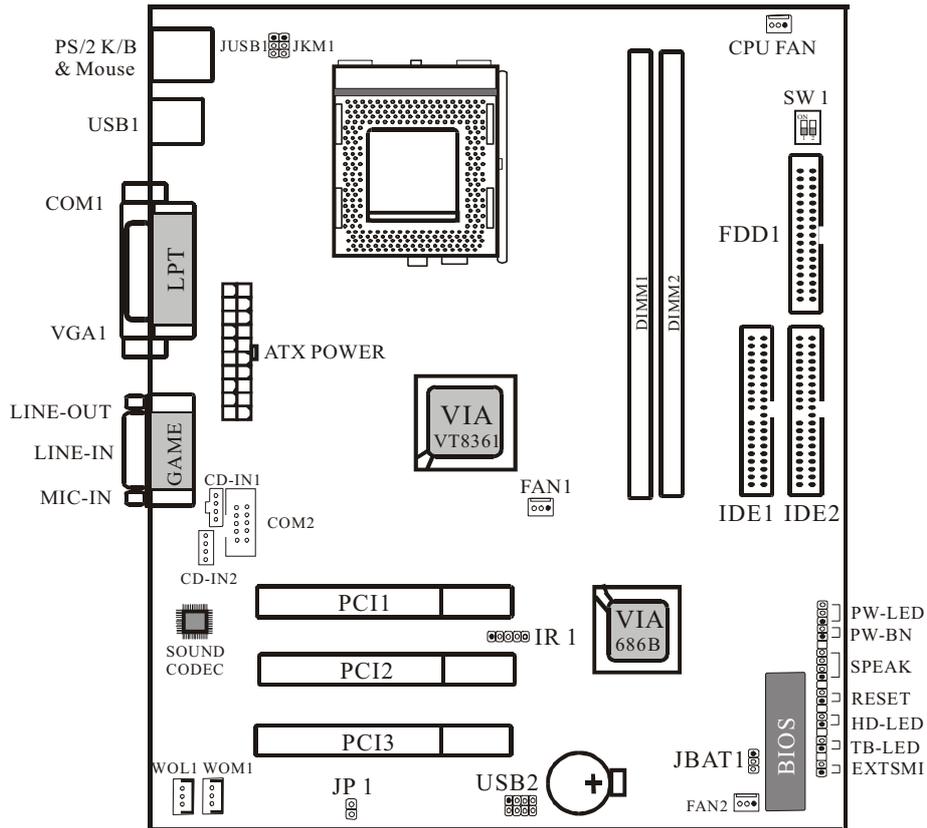
Insert the Support CD that Came with motherboard into your CD-ROM drive or double-click the CD drive icon in MY Computer or run E:\SETUP.EXE (assuming that your CD-ROM driver E:)



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## Chapter 2 Installation

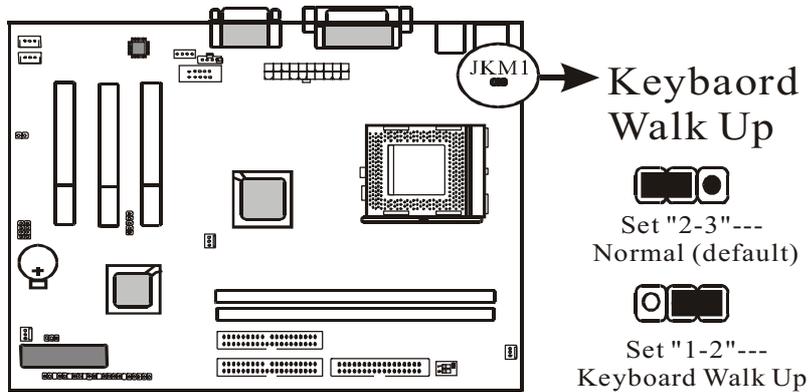
### 2-1 Layout Reference



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### 2-1-1 Jumper Settings

### 2-1-2 JKM1: Keyboard Walk Up Select



### 2-1-3 JUSB1: USB Mode Wake Up

### 2-1-4 CPU FAN Detect Control--ISM (Intelligent Shutdown Master)

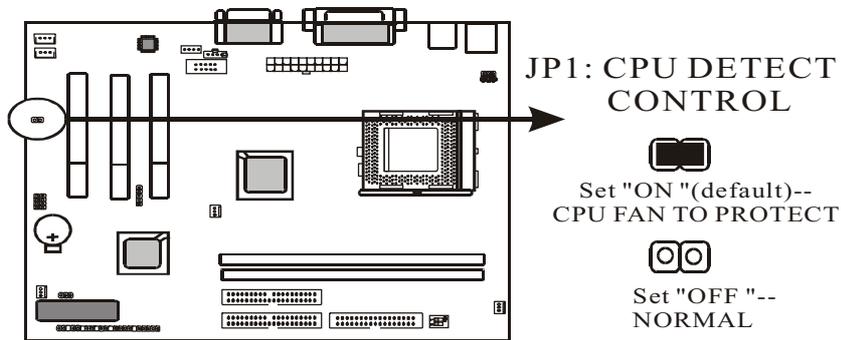
As processor technology pushes to faster speeds and higher performance, thermal management becomes increasingly crucial when building computer systems. Maintaining the proper thermal environment is key to reliable, long-term system operation. And with CPU speed constantly increasing, improper cooling of the system as a whole can lead to permanent damage. Our VIAKLE-133 has a unique design – ISM (Intelligent Shutdown Master) to provide perfect protections right at the very moment the system cooling should fail, please make good use of it! The following is an excerpt from a warning AMD released on such issue:

The new PGA (Pin Grid Array) AMD Athlon™ and AMD Duron™ processors have very different thermal specifications from any preceding AMD processor. Due to these differences, the AMD Athlon and AMD Duron processors should NEVER run

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without a cooler, not even for a few seconds. Doing so will cause the processor to overheat and fail immediately, resulting in permanent damage. While testing a processor by booting it up for several seconds without a cooler installed may be common industry practice, it should never be attempted with the new PGA AMD Athlon and AMD Duron processors.....

Typically the CPU cooler Assembly comes with FAN (Some with 2 FANS), but even so, the system cooling can deteriorate within a certain period of time. This will result in permanent damage to the processor and potentially other key components within the system. Our powerful **ISM (Intelligent Shutdown Master)** function will smartly cut off the power supply once the cooling fan fails and safely secure your CPU and main board against possible damages.



**CAUTIONS:**

1. ISM is a 100% hardware solution, no additional software installation is required. Unlike software solution, ISM will not sacrifice the system performance.
2. Must connect FAN pin of CPU cooler to **CPU FAN** header.
3. For best protection, in case the system cooling fails, ISM will compulsorily shut down the computer system without precautions (no matter your system is under DOS or Windows mode) and inevitably all unsaved data will lose.
4. The default ISM function (JP1) is 'ON'. To disable ISM function, please set JP1 Jumper to 'OFF'.
5. If the computer system automatically shut down right after being booted up, check whether the CPU cooler Assembly is connected to **CPU FAN** or the CPU fan already failed.

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## 2-2 CPU Installation

The first step in the installation of your CPU is the insertion of the CPU into the 462 pins CPU socket. Please follow the steps as outlined below carefully to avoid damage to the CPU.

### Avoid Static Electricity

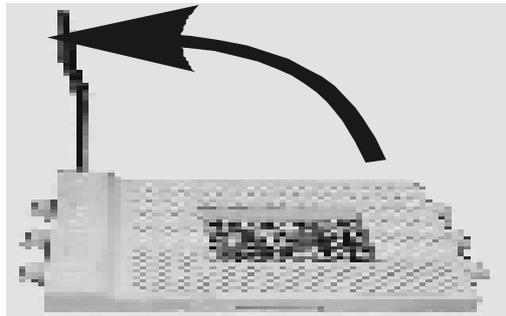
The AMD Athlon and AMD Duron processors and your motherboard contain sensitive electronic components that can be easily damaged by static electricity. We recommend that you leave the processor in its original packaging until you are ready to install it. You should only touch the edges of the processor, NEVER touch the processor pins to avoid static discharge.

First take a moment to inspect your CPU for obvious damage due to shipping or handling. Be sure that no noticeable damage exists before proceeding. You should have the following items:

- 1 AMD Athlon or AMD Duron processor.
- 1 good heatsink and fan assembly.

### Step 1

The following figure shows the processor socket. Note that the release lever on the right side of the socket is down and latched. This position is used to lock the processor in place. The lever must be raised to install the processor. To do this, first push the lever sideways to unlatch it, then raise it all the way up



(approximately 90 degrees).

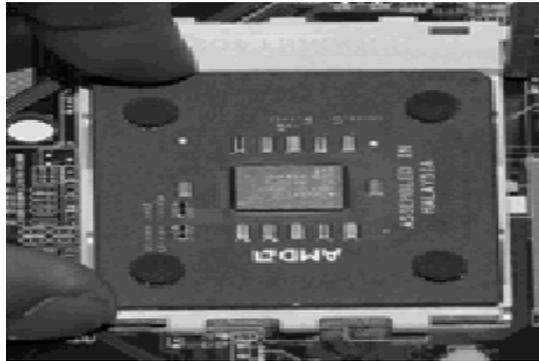
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## Step 2

The processor pin array at the top two corners is angled and has no pins in the corners. Notice that at the top of the socket on the motherboard (near where it says "Socket 462") the corners also do not have positions for pins. The processor must be positioned so the pins match up properly. When you do that, the corner of processor that is cut off will be positioned next to the release pivot.

It should take no force to install the processor, this is a zero insertion force (ZIF) socket. If it takes any force you are doing something wrong. Check the pin alignment and also make sure the release lever is raised up completely.

After placing the CPU lower the release lever to lock the processor in place.



Now with the processor properly installed, you can proceed to install the heatsink. It is important to note that if you have never installed a heatsink on an AMD Athlon or AMD Duron processor before it may be difficult. We recommend you do a dry run a few times before doing the final installation. To allow you to do this read the following instructions. Do not remove the film on the thermally conductive compound until you are ready to do the final installation.

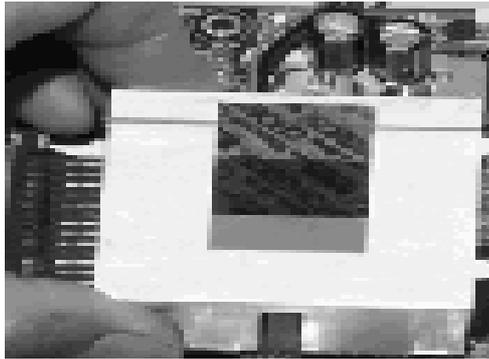


Never run the processor without the heatsink properly and firmly attached.

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### Step 3

The picture below shows the bottom of the heatsink. Notice the step in the heatsink surface, this portion fits over the top of the socket, where the legend "Socket 462" is molded into the plastic. The heatsink must be mounted with this step above the top of the socket or the heatsink will not be touching the processor properly.



The next picture shows the removal of the plastic film from the thermally conductive compound. The thermal compound is a thin layer of material that increases the efficiency of the heatsink by filling microscopic surface voids in the processor or heatsink surface with a thermally conductive material. Please do not remove the plastic film until you have practiced installing the heatsink and mounting the clips on the socket. It can take a few tries to get used to doing this.



The following picture shows a side view of the heatsink with the retaining clip at the

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bottom of the heatsink. Make sure this retaining clip is at the bottom of the heatsink before trying to install it.



The following picture shows the non-moveable end of the heatsink retaining clip installed on the lug at the bottom of the processor socket. This end of the clip simply slides over the lug when you tilt the heatsink / fan assembly towards the lug. Now lock the locking clip for the retaining strap over the lug at the other (pivot end) of the processor socket. This is an easy procedure after you do it a few times, but initially it will require you to use a finger on one hand to push the latch down and use your other hand to push the latch in. This is the part you need to practice to install the clip properly. When you are holding the heatsink, make sure you do apply pressure to the fan. You could damage it and cause thermal failure of the processor.



Be careful not to scrape the motherboard during the mounting of the fan or else damage may occur to the motherboard.

Now connect the wire from the heatsink fan to the CPU FAN connector on the motherboard. This connector is keyed and can only be installed one way. If you use a heatsink assembly that has two cooling fans, connect one to CPU FAN and the other to FAN1. For more information on the FAN connectors, refer to the FAN connector section later in this section.



This main board supports ISM functions (please refer to page 12 for more information), make sure you connect CPU heatsink assembly to CPU FAN header. Otherwise, the main board will malfunction.

## 2-2-1 CPU Clock settings

### SW1: External Frequency Selection

CPU	1	2	
100MHz	ON	ON	
133MHz	OFF	OFF	

This potion tells the clock generator what frequency to send to the CPU, DRAM and the PCI bus. This allows the selection of the CPU's External Frequency (or Bus Clock). The Bus Clock multiplied by the Frequency Multiple equals the CPU's Internal frequency (the advertified cpu speed).



Frequencies other then the recommended CPU bus frequencies are not guaranteed to be stable!

The following list contains the standard settings for the AMD Athlon and Duron CPUs known at time of publication:

CPU Name	Multiplier	Bus Frequency	CPU Name	Multiplier	Bus Frequency
Athlon 1.4GHz	14.0x	100MHz	Athlon 1.4GHz	10.5x	133MHz
Athlon 1.3GHz	13.0x	100MHz	Athlon 1.3GHz	10.0x	133MHz
Athlon 1.2GHz	12.0x	100MHz	Athlon 1.2GHz	9.0x	133MHz
Athlon 1.13GHz	8.5x	133MHz	Athlon 1GHz	7.5x	133MHz
Athlon 1GHz	10.0x	100MHz	Athlon 950MHz	9.5x	100MHz
Athlon 900MHz	9.0x	100MHz	Athlon 850MHz	8.5x	100MHz
Athlon 800MHz	8.0x	100MHz	Athlon 750MHz	7.5x	100MHz
Athlon 700MHz	7.0x	100MHz	Athlon 650MHz	6.5x	100MHz
Athlon 600MHz	6.0x	100MHz	Duron 700MHz	7.0x	100MHz
Duron 650MHz	6.5x	100MHz	Duron 600MHz	6.0x	100MHz

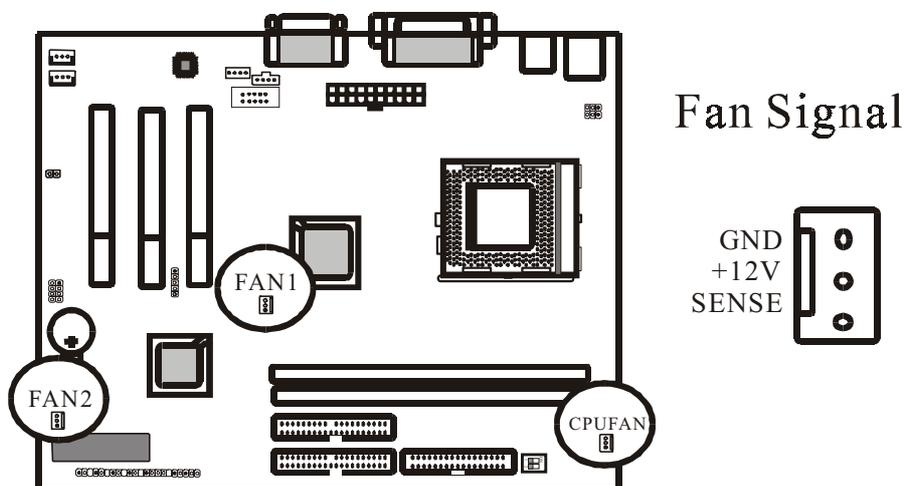
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## 2-2-2 CPU and System Cooling

Any attempt to operate the AMD Athlon™ Processor without a suitable cooling solution will result in permanent damage to the processor and potentially other components within the system.

### ***Fan Headers***

Your VIAKLE-133 Allows the use of in all 3 FANS. Of these 3 FANS, 1 can be used by the CPU Heatsink assembly (Some heatsink assembly come with 1 FANs). The other 2 FAN Headers allow connection of a Chassis Fan and a Power Supply FAN respectively. For a the location of the FAN connectors, refer to the following picture:



- CPU FAN: CPU Main FAN
- FAN1: Chassis FAN
- FAN2: POWER Supply FAN

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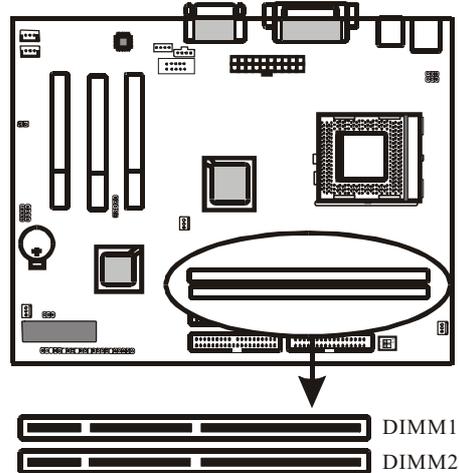
The lay-out of all FAN Headers is the same, please refer to the picture below:  
(Note: RPM sens only for FAN1 & FAN2)



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## 2-3 Memory

The VIAKLE-133 supports only Dual Inline Memory Modules (DIMMs). Two sockets are available for 3.3Volt unbuffered SDRAM (Synchronous Dynamic Random Access Memory). The sizes that are supported are: 8, 16, 32, 64, 128, 256, or 512MB, memory sizes between 8MB to 1GB can be formed this way. This motherboard also supports NEC's Virtual Channel (VC) SDRAMs. Refer to the picture below for the position of the DIMM slots:



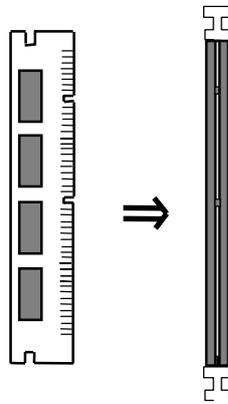
Memory speed is controlled through the BIOS, on the Advanced Chipset Features Setup page you will find several items related to SDRAM speed. Refer to the BIOS section for more details.



- DIMM modules that have more than 18 chips are not supported on this motherboard. (Due to signal integrity)
- If the system CPU bus operates at 100MHz/133MHz, use only PC100-/PC133-compliant DIMMs. (System won't boot otherwise)
- DO NOT attempt to mix PC133 SDRAMs with VCM SDRAMs.

## 2-4 Memory Installation

The DIMM modules can be inserted in DIMM slots 1 to 3. Because of the two notches in the DIMM module it can be inserted in only one way. Please refer to the picture below for information on how to insert the DIMM modules.

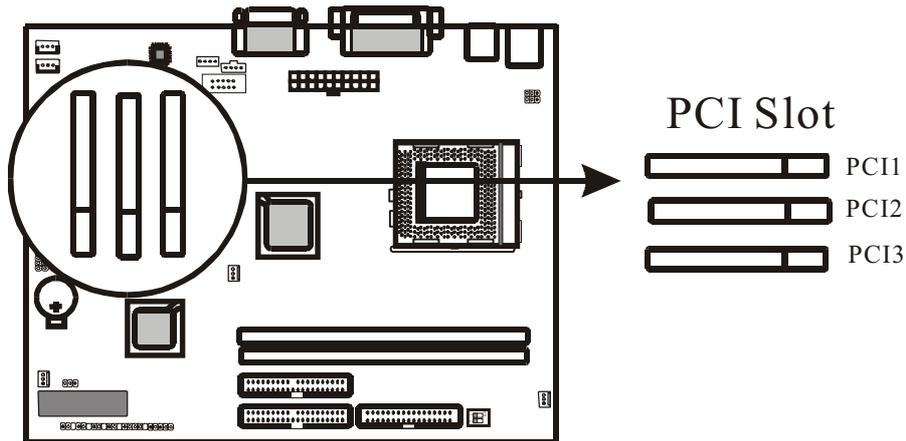


Make sure that you unplug your power supply when adding or removing memory modules or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards

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## 2-5 PCI Slot

The PCI slots allow for expansion cards to be added to the system. Expansion cards come in a great variety, Video cards, SCSI cards, Sound cards to name but a few. Refer to the picture below for the location of the PCI slots:



### General steps to install a new Expansion Card:

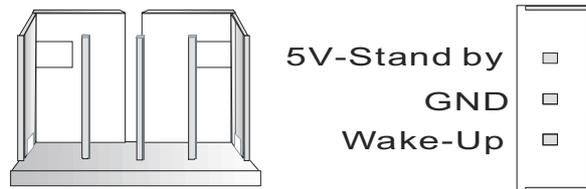
- Read the documentation for your expansion card and make any necessary hardware or software settings for your expansion card, such as jumpers.
- Remove the cover of your computer system case and the bracket plate on the slot you intend to use. Retain the bracket for possible future use.
- Carefully align the card to the slot and press firmly.
- Now secure the card in the slot with the screw you removed.
- Replace the computer case cover.
- Set up the BIOS if necessary (This includes interrupts)
- Install the necessary software drivers for your expansion card.

If you run into problems with expansion cards this may be due to interrupt issues. Please refer to the interrupt section later in this chapter.

---

## 2-6 Wake On Lan Header

The Wake On LAN Header is described under the PCI section because the WOL Header can accept a cable from a PCI LAN Card that supports Wake On LAN. For the pin lay-out of the WOL header, please refer to the picture below.



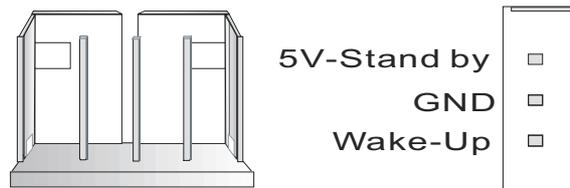
The Wake-On-LAN feature provides the capability to remotely power-on client systems that support Wake-On-LAN by simply sending a Wake-On-LAN packet. After waking up files can be uploaded to or downloaded from the client. With this feature, network administrators can flexibly perform client maintenance during off-hours so that Total Cost of Ownership (TCO) will be lower. Wake-On-LAN is a remote management tool with advantages that can reduce system management workload, provide flexibility to the system administrator's job, and of course save time-consuming efforts and costs.

**Using Wake-On-LAN on your system requires a LAN adapter that supports the Wake-On-LAN and software such as LDCM Rev 3.1x or later that can send and receive wake-up packets.**

## 2-7 Wake On Modem Header

The Wake On Modem Header is described under the PCI section because the WOM Header can accept a cable from a PCI Modem Card that supports Wake On Modem (Also known as Wake On Ring). For the pin lay-out of the WOM header, please refer to the picture below.

After connecting the WOM cable from your modem to the WOM header, you can set the BIOS to allow the system to wake up when the Modem Card receives a Ring signal.



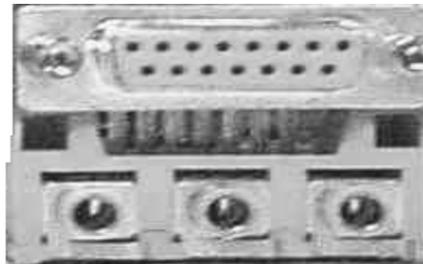
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## 2-8 On board Audio

The VIAKLE-133 southbridge supports AC'97, a standard that allows low cost Audio and Modem Codecs to be added to the motherboard. Your motherboard comes with a VIA VT1611 Audio codec. The AC'97 standard defines primary and secondary codecs, the onboard VIA codec is configured as the primary codec. A secondary AC'97 codec can be added to the motherboard through the AMR slot, refer to the next section for information on that.

### 2-8-1 Back Panel Audio Connectors

The back panel Audio connectors allow connection of speakers, a microphone, and MIDI devices etc. Refer to the following picture:



Line-In      Line-Out      Mic-In

The Game port can be used with joysticks, or alternatively as MIDI port. The Line-out is for speakers, be sure to use only amplified speakers. The Line-IN and Mic-IN are inputs that can be used for recording.

### 2-8-2 Onboard audio connectors

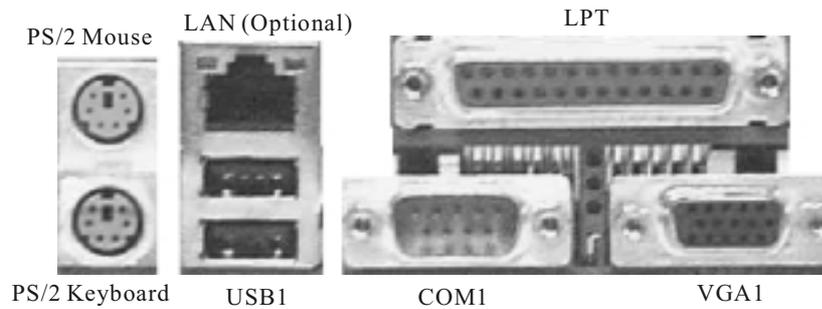
The onboard connectors can be used with additional devices, refer to the picture below:



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## 2-9 Back panel connectors

The back-panel contains most standard IO connectors. Please refer to the picture below:



### 2-9-1 PS/2 Mouse and Keyboard

These connectors allow for a PS/2 style mouse and keyboard to be connected.

#### **PS/2 Keyboard**

The keyboard can be plugged in in only one way. Please do not force the connector in, it may get damaged by use of excessive force. It is easy to make the mistake of reversing the PS/2 keyboard and mouse connectors. If your keyboard does not work, check this first. The keyboard must be inserted into the lower connector.

#### **PS/2 Mouse**

The mouse can be plugged in in only one way. Please do not force the connector in, it may get damaged by use of excessive force.

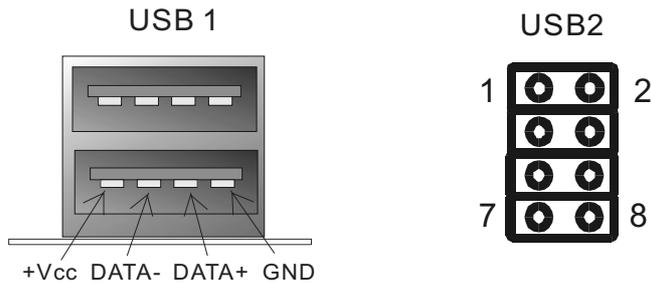
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### 2-9-2 USB

The VIAKLE-133 supports 4 USB connectors in all. Two of those USB connectors are available through the back-panel. The lay-out of the USB connector is as follows:

If you want to make use of the other onboard USB ports you will need to purchase a USB extension cable / bracket. This will connect to the onboard USB2 header.

For the lay-out of the USB2 header, refer to the following table:



	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
USB2	+5V	GND	DATA1-	DATA2+	DATA1+	DATA2-	GND	+5V

### 2-9-3 Serial Ports

The serial ports can be used to connect devices such as a serial mouse and a modem. A serial mouse is usually connected to COM1. Please refer to the following table for the pin lay-out of the serial ports:

<b>Pin 1</b>	DCD (Data Carrier Detect)	<b>Pin 6</b>	DSR (Data Set Ready)
<b>Pin 2</b>	SIN (Serial IN or Receive Data)	<b>Pin 7</b>	RTS (Request To Send)
<b>Pin 3</b>	SOUT (Serial OUT or transmit data)	<b>Pin 8</b>	CTS (Clear To Send)
<b>Pin 4</b>	DTR (Data Terminal Ready)	<b>Pin 9</b>	RI (Ring Indicate)
<b>Pin 5</b>	GND		

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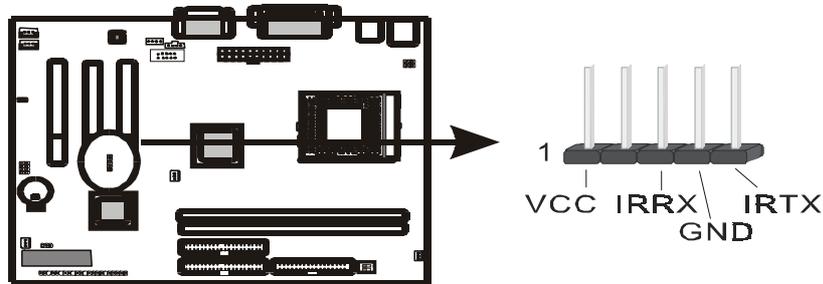
## 2-9-4 Parallel Port

The parallel or printer port is used, as its name suggests, primarily to connect printers. But devices like cameras and scanners do also come with parallel port interfaces. The pin lay-out of the parallel port is as follows:

<b>Pin 1</b>	Strobe	<b>Pin 10</b>	ACK#
<b>Pin 2</b>	Data 0	<b>Pin 11</b>	BUSY
<b>Pin 3</b>	Data 1	<b>Pin 12</b>	PE
<b>Pin 4</b>	Data 2	<b>Pin 13</b>	SELECT
<b>Pin 5</b>	Data 3	<b>Pin 14</b>	AUTO FEED#
<b>Pin 6</b>	Data 4	<b>Pin 15</b>	ERR#
<b>Pin 7</b>	Data 5	<b>Pin 16</b>	INIT#
<b>Pin 8</b>	Data 6	<b>Pin 17</b>	SLIN#
<b>Pin 9</b>	Data 7	<b>18-25</b>	GND

## 2-10 IrDA (InfraRed Remote Link)

If you want to make use of an InfraRed Remote device you can use IR1, a 5-pin header on the motherboard. You will need to buy a separate IR device from your dealer. The motherboard supports both ASKIR and HPSIR specifications, you will need to set the standard you want to use in the BIOS on the integrated peripherals page. The pin lay-out of IR1 is as follows:



---

## 2-11 IDE 1 and IDE 2

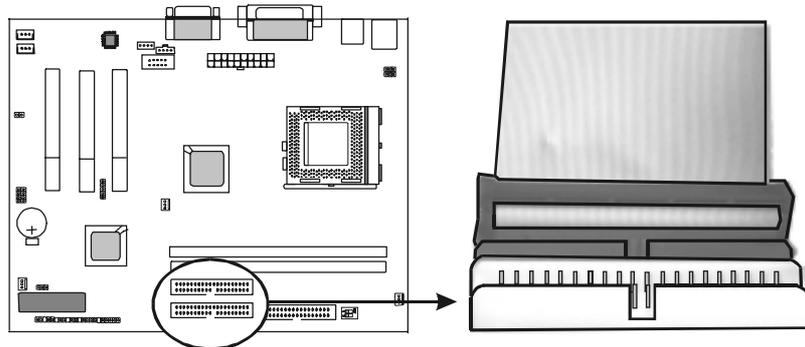
The IDE connectors are used to connect IDE devices such as Harddisks and CD-ROM drives to the motherboard. Each connector constitutes an IDE channel, each channel accepts 2 IDE devices, one Master and one Slave. The IDE 1 connector is also known as the primary channel, IDE 2 is the secondary channel. Therefore the primary Master is the IDE device connected to IDE 1 as Master, the primary Slave is the IDE device connected to IDE 1 as Slave. Jumpers on the IDE device determine Master and Slave settings. Your harddisk or CD-ROM should have a sticker with jumper settings. Make sure that you set these jumpers correct. Please use the following advise as reference:

- If you have only device connected to an IDE connector, always set it as Master.
- If you have one HDD and CD-ROM in your system, then connect the HDD to IDE 1 as Master, and the CD-ROM to IDE 2 as Master.
- If you have one Harddisk and one CD-ROM connected to the same IDE connector, set the HDD to Master and the CD-ROM to Slave.

### Ultra DMA

This motherboard supports Ultra DMA 66 IDE devices, if your southbridge is the 82C686B it will even support Ultra DMA 100. If the UDMA mode for the IDE channels are set to auto in the BIOS the motherboard will use the fastest possible interface to communicate with your IDE devices. (Note however that windows may not support UDMA 100 yet, see the FAQ chapter)

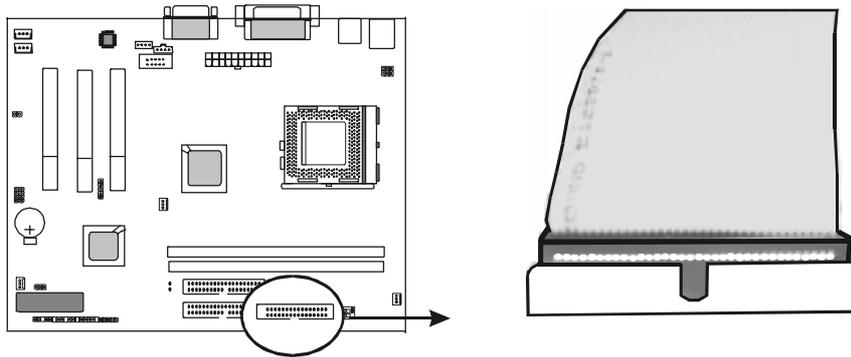
For the location of the IDE connectors, refer to the following picture:



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## 2-12 FDD1 (Floppy Disk)

The floppy disk connector allows connection of a floppy drive. In all two floppy drives can be connected to the motherboard, known as floppy A and B. The BIOS allows you to disable the floppy controller if you do not use any floppy drives, that will free an Interrupt. The BIOS also allows swapping of floppy A and B although this will not be useful to most users. For the floppy disk connector location, refer to the following picture:



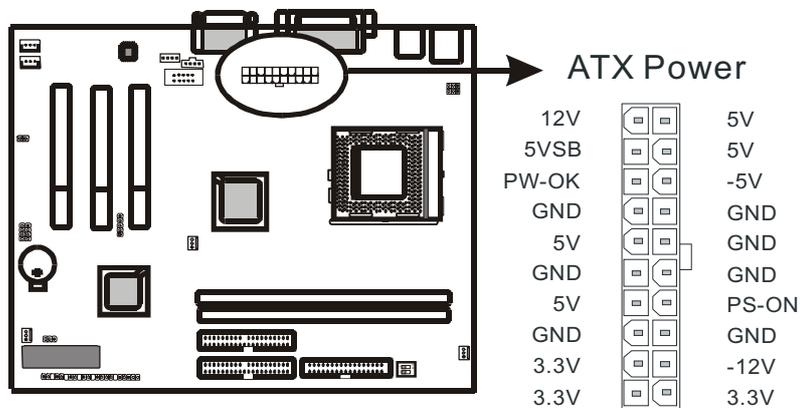
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## 2-13 PWR1 (ATX power supply)

The ATX power supply connector is where your power supply plug must be inserted. Note that this motherboard only supports ATX style power supplies, AT style power supplies are not supported. Note the following:

- We recommend use of at least a 250W power supply, if you use a very fast CPU (> 900MHz) and have many peripheral devices we recommend use of a 300W power supply. **Do not save on the power supply, it feeds the whole system.**
- If you use WOL and WOM, make sure that power supply can support at least 720mA on the 5V standby line. Anything LESS is unacceptable. Even better, get a 1A 5V standby power supply.

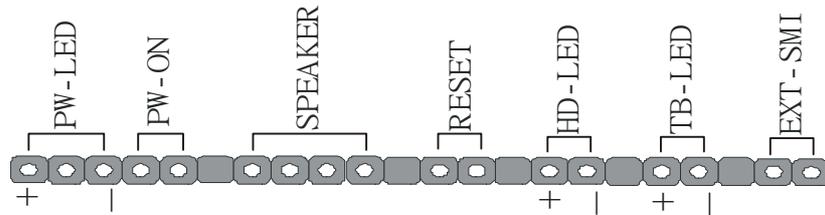
For the lay-out of the AXT connector, please refer to the following picture:



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## 2-14 Front panel connectors

The front panel connector strip is located near the battery and the BIOS IC. It will allow you to connect LEDs and Switches in your case to the motherboard. Please refer to the following picture for the lay-out of the front panel connector strip:



Descriptions of each individual connector follow:

### ■ PW-LED3

The Power LED connector allows you to connect a three pin LED from the case. Notice the polarity, LEDs will only light up if the polarity is correct.

### ■ PW-ON

The Power ON connector is to be used with the push-button power switch in the case. This push button should be a momentarily contact type switch (that is, it should not lock in the ON state but flip back OFF as soon as you release it). All ATX cases come with such a switch. The BIOS allows you to select the power down mode. Either power down immediately on a button push, or with a 4 second delay.

### ■ Speaker

The speaker connector is for the internal case speaker. This speaker will enable the BIOS to give spoken messages in case of boot up trouble. The BIOS beep codes also use this speaker. For Games and Music this speaker will not be used, but rather the back panel line-out connector.

---

- **Reset**

The reset connector is for connection of the reset switch. This switch, when pressed, will immediately reset the system (that is, no matter what you were doing, the system will restart. This is very similar to powering to system off and then on again). Note that Windows, Linux and other operating systems do not appreciate the use of the reset switch. When you are working under windows, always use the shutdown feature under the start button (Yes, very logical).

- **HDD LED**

This LED will light up whenever one of your IDE devices is being accessed. Usually this will be a harddisk, as such the name HDD LED.

- **TB-LED**

This is the Turbo LED, this LED is always on and is similar in function to the Power LED.

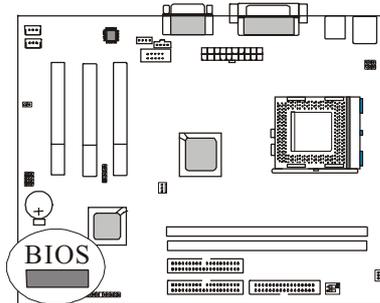
- **Ext-SMI**

This is the External System Management Interrupt Button connector. Connect the second button on your ATX case to this connector. Pressing that button will force the system into suspend mode. (The BIOS allows specifying of the suspend state, and of the wake-up events that can wake the system up again).

---

## Chapter 3 BIOS Setup

The BIOS is a piece of software (Basic Input Output System) that performs most low level tasks. When you start up your system, the BIOS is the first code that gets to run. The BIOS resides in a FLASH ROM, and the code in the FLASH ROM can be updated through a special utility called AWDFLASH. (Award Flash). This is generally not necessary, but in some cases updating the BIOS is necessary to support new devices that were not on the market at the time the motherboard was released. For the physical location of the BIOS FLASH ROM IC on your KTAPRO motherboard, refer to the picture below:



The BIOS IC is inserted in an IC socket, which means that it can be removed and exchanged for another IC if necessary.

### Is updating my BIOS necessary?

As a general rule if your system is functioning properly and you are not an experienced user, do not try to update the BIOS. Only if you have specific problems that a BIOS update may solve may it be advisable to update the BIOS.

The update process is pretty complex, and you should bear in mind that if updating the BIOS goes wrong you may render your system unbootable. Therefore, do not update unless you know what you are doing.

---

### 3-1 Updating the BIOS

As said, this procedure is complicated, ONLY update your BIOS when you experience problems with your system. Because each BIOS release completely overwrites the previous version and there is no need to update to intermediate BIOS releases when updating the BIOS. Therefore always use the latest BIOS revision when doing a BIOS update. The BIOS update procedure is as follows:

- In order to flash update the BIOS, you will need 2 files:  
The BIOS binary file (.bin file from the website)  
AWDFLASH.EXE utility file. (This utility can be downloaded from our website)
- Create a directory on your C harddisk drive: and name it FLASH
- Put the BIOS .bin file and the AWDFLASH utility in the FLASH directory.  
You may want to jot the BIOS .bin file name down on a piece of paper.
- Restart the computer, press DEL to go into the BIOS, then please disable the following:  
System BIOS Cacheable (in Advanced Chipset Features)  
Video BIOS Shadow (in Advanced BIOS Features)  
Save the changes by selecting 'save and exit', and restart the computer.
- Press Ctrl + F5 just before Windows is starting up (right after the second BIOS screen) for a DOS boot, you will see the message "Windows is bypassing all your startup files". You end up at a DOS prompt.
- Now type `cd FLASH` to change to the newly created directory.
- Here type `AWDFLASH mybios.bin /py /cc /sn /cd`, where mybios.bin is the file name for the BIOS binary file you want your BIOS to upgrade to. Now the upgrading will begin.



Do NOT in any way disturb the system during upgrading. If for any reason the system is stalled your system may not be able to boot again.

- After the upgrading has ended press F1 to reset, press DEL to go into BIOS and make the following changes:  
Load Setup Defaults.  
Go into the Frequency/Voltage Control page to adjust your CPU speed and voltage (please make sure the CPU voltage matches your CPU specs, in case of doubts leave it to 'default').  
Save your settings and you are done.

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## 3-2 The CMOS Memory

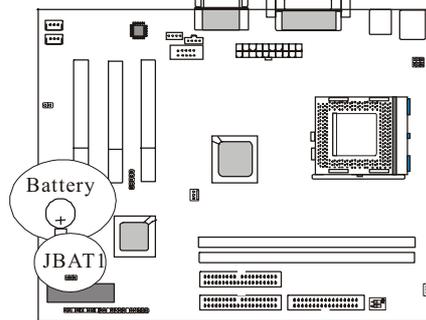
The BIOS uses the CMOS memory to store all the settings that have been made through the BIOS Setup pages.

### Battery

The CMOS memory remembers all settings, even when the system is switched off, by use of a 3V Lithium battery. If this battery runs low CMOS is unable to keep its settings and you will need to replace the battery. The BIOS will give you an error message when it detects a low battery voltage. The error message 'CMOS checksum error' may also point to a low battery problem.

### Restoring default settings

You can load default values into the CMOS memory by selecting 'Load Optimized Defaults' in the BIOS Setup. If you need to force the CMOS settings to default without entering the BIOS Setup page you can use the JBAT1 jumper. For the location of the jumper and the battery, refer to the following picture:



Normally JBAT1 will be in the 1-2 position, this will connect the battery to the southbridge of the chipset which contains the CMOS memory. If JBAT1 is temporarily set to 2-3 this will interrupt the battery electricity flow, and the CMOS

---

memory will be erased, this will however only work if the power supply is not switched on. Now at the next reboot the BIOS will automatically load the CMOS default values.

Take the following steps to clear CMOS memory:

- Take the power cord from the power supply.
- Temporarily set JBAT1 to 2 – 3, and set it back to 1 – 2.
- Put the power cord back and restart the system, the default values will be loaded.

**JBAT1 Setting:**

	<b>Retain CMOS settings</b>	<b>Clear CMOS Settings</b>
<b>JBAT1</b>	 1 2 3	 1 2 3

The following part of this chapter will describe the individual BIOS Setup pages and all the items that can be adjusted to fine tune your system.

---

### 3-3 The BIOS Setup Pages

To enter the BIOS Setup pages, take the following steps:

- Start up the system.
- After memory counting has finished, press [DEL] to enter the BIOS Setup pages.

Now the following menu will appear:

<i>CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software</i>	
<i>? Standard CMOS Features</i>	<i>? Frequency/Voltage Control</i>
<i>? Advanced BIOS Features</i>	<i>Load Optimized Defaults</i>
<i>? Advanced Chipset Features</i>	<i>Set Supervisor Password</i>
<i>? Integrated Peripherals</i>	<i>Set User Password</i>
<i>? Power Management Setup</i>	<i>Save &amp; Exit Setup</i>
<i>? PnP/PCI Configurations</i>	<i>Exit Without Saving</i>
<i>? PC Health Status</i>	
<i>Esc : Quit    F9: Menu in BIOS</i>	<i>↑ ↓ → ← : Select Item</i>
<i>F10 : Save &amp; Exit Setup</i>	
<i>Time, Date, Hard Disk Type . . .</i>	

#### Selecting items

To Select items, use the following method:

- Use the arrow keys to move between items and select fields.
- Press [enter] to enter the selected submenu.

#### Submenus

All items that start with a ? are submenus. Pressing [enter] when a submenu is

selected will enter that submenu.

### Modifying selected items

The [Up]/[Down] keys can be used to modify values within the selected fields. Note that some fields also let you enter values directly.

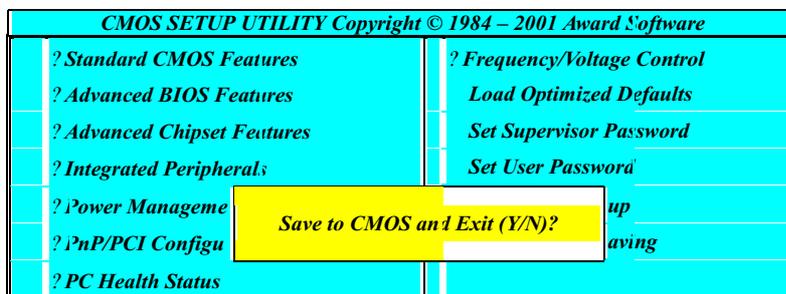
### Hot Keys

Throughout the BIOS Setup Pages the hot keys will give you access to a group of commands. Refer to the following table for the hot keys and their function:

Key	Command	Description
F10	Save & Exit Setup	Saves the changes made and reboots the system.
[Esc]	Quit	Returns to the previous menu
<b>F1</b>	Help	General Help
<b>F2</b>	Help	Help for specific item
<b>F5</b>	Previous values	Restores the previous values. These are the values that the user started the current session with.
F7	Optimized Defaults	Loads all options with the Optimized Default values.

### Save & Exit Setup

When you select the [SAVE & EXIT SETUP] option from the Main Menu, all changes that you made will be saved to the CMOS memory and the setup utility will exit, rebooting your system.



Pressing [Y] and [enter] will save the changes, pressing [N] and [enter] will keep the old settings.

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**Exit Without Saving**

Selecting 'Exit Without Saving' will exit Setup without saving changes to CMOS.

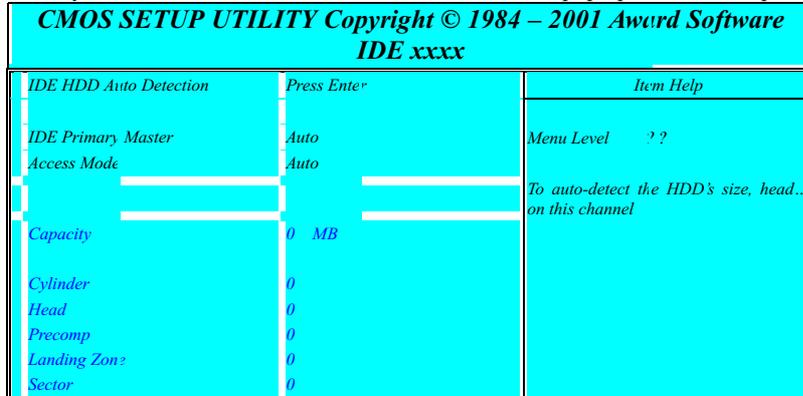
<b>CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software</b>	
? Standard CMOS Features	? Frequency/Voltage Control
? Advanced BIOS Features	Load Optimized Defaults
? Advanced Chipset Features	Set Supervisor Password
? Integrated Peripherals	Set User Password
? Power Manag	Quit without Saving (Y/N)?
? PnP/PCI Conf	up
? PC Health Status	aving

Pressing [Y] and [enter] will Exit without saving, pressing [N] and [enter] will not Exit.



## IDE Devices

When you select one of the IDE devices, a submenu will pop up. Refer to the picture below.



This Menu is the same for all 4 IDE devices:

- Primary Master IDE 1 first device
- Primary Slave IDE 1 second device
- Secondary Master IDE 2 first device
- Secondary Slave IDE 2 second device

	Values	Meaning
IDE HDD Auto Detection	Press Enter	Pressing Enter will make the BIOS auto detect the IDE device on this channel. The result will be displayed below, starting with the 'capacity' item. (These items are read only)
IDE xxx	Auto	This will auto detect the device at each boot up.
	Manual	This will use the setting set by the user. No auto detection at start up will take place.
	None	This setting means no device is present. This will prevent the BIOS from looking for a device and speed up booting.
Access Mode	CHS	Selects the CHS access mode.
	LBA	Logical Block Addressing, for HDD drives larger than 504MB (All modern HDDs)
	Large	For very large HDDs.
	Auto	The BIOS will automatically detect the best access mode.

---

### Drive A and Drive B

The Drive A / B items allow you select the type of device that you have attached to the Floppy (FDD1) connector on the motherboard. You can select between different floppy disk drive types by using the Page-Up and Page-Down keys. If you press [enter] while Drive A or B is selected the following menu will pop up that will allow to choose a device as well:

<b>Drive X</b>		
<i>None</i>	...	[ ]
<i>360K, 5.25 in.</i>	...	[ ]
<i>1.2M, 5.25 in.</i>	...	[ ]
<i>720K, 3.5 in.</i>	...	[ ]
<i>1.44M, 3.5 in.</i>	...	[ + ]
<i>2.88M, 3.5 in.</i>	...	[ ]
↑↓ : Move    Enter: Accept    ESC: Abort		

### Video

The Video item allows you to select a video mode. Since most modes are outdated we advise you to always select EGA/VGA. You can select between different video modes by using the Page-Up and Page-Down keys. If you press [enter] a menu pops up.

(Mono is for a monochrome screen that can only display one color)

<b>Video</b>		
<i>EGA/VGA</i>	...	[ + ]
<i>CGA 40</i>	...	[ ]
<i>CGA 80</i>	...	[ ]
<i>MONO</i>	...	[ ]
↑↓ : Move    Enter: Accept    ESC: Abort		

---

### Halt On

The BIOS will stop booting when an error is detected. You can set through this item what errors will stop the system booting. You can select between different error modes by using the Page-Up and Page-Down keys.

	Values	Meaning
	All Errors	Stop booting on all errors.
	No Errors	Always Boot, no matter what error is detected.
	<b>All, but keyboard</b>	Stop booting on all errors, but not on a keyboard error.
<i>Halt On</i>	All, but diskette	Stop booting on all errors, but a diskette error.
	All, but disk/key	Stop booting on all errors, but keyboard and diskette errors.

### 3-3-2 Advanced BIOS Features

Select the [Advanced BIOS Features] option from the Main Menu and press [Enter] key.

<b>CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software</b>		
<b>Advanced BIOS Features</b>		
		<i>Item Help</i>
Virus Warning	Disabled	
CPU Internal Cache	Enabled	
External Cache	Enabled	Menu Level ?
CPU L2 Cache ECC Checking	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	HDD 0	
Third Boot Device	LS 120	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typeomatic Rate Setting	Disabled	
X Typeomatic Rate (Chars/Sec)	6	
X Typeomatic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64 MB	NonOS-2	
Video BIOS Shadow	Enabled	
C8000 – CB7FF	Disabled	
CC000 – CF7FF	Disabled	
D0000 – D37FF	Disabled	
D4000 – D77FF	Disabled	
D8000 – DB7FF	Disabled	
DC000 – DF7FF	Disabled	

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

The screen is not as long on your monitor. You can use the arrow keys to scroll down and up the page. The following explains all individual items and their meaning.

---

### Virus protection

	Values	Meaning
<i>Virus Warning</i>	Enabled	The BIOS will give a beep and a warning whenever an attempt is made to write to the boot sector of the HDD.
	Disabled	The BIOS will allow write attempts to the boot sector

### CPU Cache settings

	Values	Meaning
<i>CPU Internal Cache</i>	Enabled	This will enable the Internal L1 cache of your CPU.
	Disabled	(Not recommended)
<i>External Cache</i>	Enabled	This will enable the Internal L2 cache of your CPU.
	Disabled	(Not recommended)
<i>CPU L2 Cache ECC checking</i>	Enabled	This will enable CPU Internal L2 cache ECC (Error Checking).
	Disabled	(Not recommended)

### Quick Power On Self Test

	Values	Meaning
<i>Quick Power On Self Test</i>	Enabled	The BIOS will execute test routines that test most parts of the motherboard during boot up.
	Disabled	The BIOS will skip the tests, speeding up the boot process. Errors will on the other hand not be detected.

### Boot Devices

The first to third boot device items allow you to select what device the system should boot from. If the BIOS fails to boot from the first boot device, it will attempt to boot from the second boot device, if that fails too, the third boot device is tried. If you set the *boot other device* item to enabled, the BIOS will try to boot from other devices if the first to third choices all fail. If you set this item to disabled, the BIOS will not boot if the first to third devices all fail to boot.

The list you can choose from for the first to third device is the same, refer to the table below:

	Values	Meaning
<i>First ~ Third boot device</i>	Floppy	The system attempt to boot from diskette. (first boot device default)
	LS 120	The system will attempt to boot from an attached LS 120 drive. (Third boot device default)
	HDD 0	The system will attempt to boot from the first HDD. (Second boot device default)
	SCSI	The system will attempt to boot from the first device attached to the first SCSI interface.
	CD-ROM	The system will attempt to boot from the first CD-ROM found.
	HDD1	The system will attempt to boot from the second HDD.
	HDD2	The system will attempt to boot from the third HDD.
	HDD3	The system will attempt to boot from the fourth HDD.
	ZIP100	The system will attempt to boot from an attached ZIP 100 drive
	LAN	The system will attempt to boot over the network. You will require a LAN card with boot BIOS for this option to function.
Disabled	This disables booting from this device.	

#### Floppy Drive Settings

	Values	Meaning
<i>Swap Floppy Drive</i>	Enabled	This will swap floppy A and B. Most systems not even have 2 floppy drives, so this item is irrelevant .
	Disabled	Floppy A and B are not swapped
<i>Boot-up Floppy Seek</i>	Enabled	The BIOS will test whether the floppy has 40 or 80 tracks during boot up. All new floppy drives are 80 tracks.
	Disabled	The BIOS will not test the amount of tracks.

#### Gate A20 Option

	Values	Meaning
<i>Gate A20 Option</i>	Normal	
	Fast	

---

### Keyboard Typematic Rate and Delay Settings

If you set the *typematic rate setting* item to disabled, the system will use the defaults of 6 and 250 for the rate and delay items. If you set it to enabled you can select the values yourself. Refer to the table below:

	Values	Meaning
<i>Typematic Rate</i>	6 ~ 30	This value sets the amount of time a character is repeated per second if it is kept down on the keyboard. Choose from the following values: 6, 8, 10, 12, 15, 20, 24, 30.
<i>Typematic Delay</i>	250 ~ 1000	This value sets the amount of time in ms before a character starts repeating after it was pressed on the keyboard. Choose from 250, 500, 750 and 1000 ms.

### Security Option

The security option item allows you to select when the password needs to be entered. Refer to the table below:

	Values	Meaning
<i>Security Option</i>	Setup	Password must be entered only when the user wants to enter the BIOS setup.
	System	The password must always be entered at boot.

### OS Select for DRAM > 64MB

	Values	Meaning
<i>OS select for DRAM &gt; 64MB</i>	Non-OS2	If your OS is not OS2, always select this setting
	OS2	Select this setting only if your OS is OS2

### Shadow Options

The shadow options allow the BIOS to shadow (write to RAM) certain parts of the BIOS code. This will speed up running the code, since running from RAM is much faster than running from FLASH ROM.

---

The individual memory ranges refer to BIOS code that may be present on expansion cards. Normally you will not need to enable shadowing for these ranges. Refer to the table below for details:

	Values	Meaning
<i>Video BIOS Shadow</i>	Enabled	This will allow the BIOS to write the video BIOS to RAM. This will speed up execution and is the default setting.
	Disabled	No shadowing is allowed.
<i>xxxxx –xxxxx Shadow</i>	Enabled	This enables shadowing of the selected memory range. Set to enabled only when you are sure an expansion card uses this memory range.
	Disabled	Default setting.

### 3-3-3 Advanced Chipset Features

Select the [Advanced BIOS Features] option from the Main Menu and press [Enter] key.

<b>CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software</b>		
<b>Advanced BIOS Features</b>		
DRAM Timing By SPD	Disabled	Item Help
DRAM Clock	100MHz	
SDRAM Cycle Length	3	Menu Level ?
Bank Interleave	Disabled	
Memory Hole	Disabled	
PCI Master Pipeline Req.	Enabled	
P2C / C2P Concurrency	Disabled	
Fast R/W Turn Around	Disabled	
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Frame Buffer Size	8M	
AGP Aperture size	64MB	
AGP mode	4X	
AGP Driving Control	Auto	
AGP Driving Value	DA	
On chip USB	Enabled	
USB Keyboard Support	Disabled	
USB Mouse Support	Disabled	
Onchip Sound	Auto	
CPU to PCI Write Buffer	Enabled	
PCI Dynamic Bursting	Enabled	
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	
↑↓ → ← : Move    Enter: Select    +/- /PU / PD: value    F10: save    ESC: Exit    F1: General Help F5 : Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults		

The screen is not as long on your monitor. You can use the arrow keys to scroll down and up the page. The following explains all individual items and their meaning.

---

### DRAM timing

If the DRAM Timing by SPD item is set to Enabled, the three items below will automatically be set by the BIOS. To do this the BIOS will read information out of the SPD EPROM that is located on the DIMM module, this information will tell the BIOS how to best access the memory. If you set this item to disabled, you can set the memory access items yourself. A word of warning though, if you are not familiar with DRAM settings do NOT make any changes (for the sake of system stability). Refer to the table below for the meaning of the individual DRAM items:

	Values	Meaning
<i>DRAM Clock</i>	100 MHz	If your DIMM modules are PC-100 compliant, select this setting.
	133 MHz	Only when your DIMM modules are PC-133 compliant can you use this setting. In case of instability always select 100MHz.
<i>SDRAM Cycle Length</i>	2	2 is the fastest setting, use this setting only if your DIMM modules support CAS 2
	3	This is the default setting, always use this setting when the system is unstable.
<i>Bank Interleave</i>	Disabled	This is the safest setting (default).
	2bank	This setting is faster than disabled.
	4 bank	This is fastest setting.

### Memory Hole

Some old devices need a memory hole to be present between 15M and 16M. CPU Cycles matching the hole will be passed on to the PCI bus instead of accessing the memory. Normally you can disable this setting, but if one of your devices needs it set it to enabled.

	Values	Meaning
<i>Memory Hole</i>	Disabled	There is no memory hole.
	15M – 16M	A memory hole exists between 15 and 16MB.

### Frame Buffer Size

	Values	Meaning
<i>Frame Buffer Size</i>	2M	
	4M	
	8M	

---

### PCI Bus Timing Settings

The following settings are all related to PCI timing, there is no need to change them from their default setting unless you are an experienced user.

	Values	Meaning
<i>PCI Master Pipeline Req.</i>	Enabled	A PCI Master can request a pipeline.
	Disabled	No pipeline is granted to any Master.
<i>P2C / C2P concurrency</i>	Enabled	The CPU Host is free for other transactions while a PCI transaction takes place.
	Disabled	The CPU Host bus is always forced to wait while a PCI transaction takes place.
<i>Fast R-W turn around</i>	Enabled	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.
	Disabled	This feature is disabled.
<i>CPU to PCI write buffer</i>	Enabled	When enabled CPU writes to PCI are buffered, the CPU will not have to wait for the transaction to finish.
	Disabled	The CPU will have to wait for each PCI write to finish before a new write can be initiated.
<i>PCI dynamic bursting</i>	Enabled	All transactions are buffered, and transactions that are burstable (successive) will be conducted in a PCI burst transaction.
	Disabled	PCI burst transactions are disabled.
<i>PCI Master 0 WS write</i>	Enabled	
	Disabled	
<i>PCI delay transaction</i>	Enabled	The chipset has a write buffer that supports delayed transactions. Enable this item for PCI 2.1 compliance.
	Disabled	This will shut down use of the integrated buffer, no delayed transactions are allowed.
<i>PCI #2 Access #1 retry</i>	Enabled	When #2 (AGP port) tries to access #1 (PCI) and an error occurs, the transaction will be tried again.
	Disabled	No retry will occur.

---

### AGP Settings

	Values	Meaning
<i>AGP Aperture Size</i>	4 – 128MB	This item allows setting of the portion of the main memory that is assigned to the AGP card. Normally about half or less of the total memory should be assigned. Choose from 4, 8, 16, 32, 64, and 128MB, default is 128MB.
<i>AGP Mode</i>	4X 2X 1X	
<i>AGP Driving Control</i>	Auto Manual	The BIOS sets the value automatically The AGP Driving Value item below can be used to set the value.
<i>AGP Driving Value</i>	00-FF	This value sets the timing of the signal that the video card driver uses to communicate over the AGP bus. The range is from 00-FF Hex (00-255 Dec). The default value is DA. For more information on settings see the FAQ chapter.

### AGP Bus Timing Settings

The following settings are related to AGP timing, there is no need to change them from their default setting unless you are an experienced user.

	Values	Meaning
<i>AGP Master 1 WS Write</i>	Enabled Disabled	AGP Writes are executed with 1 wait state, enable only if your AGP card supports this. AGP Writes take longer than 1 wait state, default setting.
<i>AGP Master 1 WS Read</i>	Enabled Disabled	AGP Reads are executed with 1 wait state, enable only if your AGP card supports this. AGP Reads take longer than 1 wait state, default setting.

---

### Cache Settings

The following settings are related to cacheability of video RAM and the system BIOS, change them only if you are an experienced user.

	Values	Meaning
<i>System BIOS Cacheable</i>	Enabled	This will enable caching of the system BIOS memory section. This means that BIOS code can run faster when called often.
	Disabled	This will not cache any BIOS code, meaning that BIOS code will have to be read from memory each time.
<i>Video RAM Cacheable</i>	Enabled	This will enable caching of Video memory, which speeds up video operations. This can only be done if the Video card does not access the video memory itself at the same time.
	Disabled	No caching of Video data is done, meaning that Video data will have to be read from / written to memory each time.

### USB Settings

	Values	Meaning
<i>Onchip USB</i>	Enabled	This will enable use of the USB functionality integrated into the chipset.
	Disabled	If you do not make use of USB, use this setting.
<i>USB Keyboard Support</i>	Enabled	Set to enabled if you make use of a USB keyboard.
	Disabled	If you do not use a USB keyboard, use this setting.
<i>USB Mouse Support</i>	Enabled	Set to enabled if you make use of a USB Mouse.
	Disabled	If you do not use a USB Mouse, use this setting.

### On Chip Devices

	Values	Meaning
<i>Onchip Sound</i>	Auto	The BIOS scans for a on board Sound device and enables it.
	Disabled	The BIOS does not enable on board sound devices.

### 3-3-4 Integrated Peripherals

Select the [Integrated Peripherals] option from the Main Menu and press [Enter] key.

<b>CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software</b>		
<b>Integrated Peripherals</b>		
		<i>Item Help</i>
Onchip IDE Channel 0	Enabled	
Onchip IDE Channel 1	Enabled	
IDE Prefetch Mode	Enabled	Menu Level ?
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	
<input checked="" type="checkbox"/> IR Function Duplex	Half	
<input checked="" type="checkbox"/> TX, RX Inverting Enable	No, Yes	
Onboard Parallel Port	378/IRQ	
Onboard Parallel Mode	Normal	
<input checked="" type="checkbox"/> ECP Mode Use DMA	3	
<input checked="" type="checkbox"/> Parallel Port EPP Type	EPP1.9	
Onboard Legacy Audio	Enabled	
Sound Blaster	Disabled	
SB IO Base Address	220H	
SB IRQ Select	IRQ 5	
SB DMA Select	DMA 1	
MPU-401	Disabled	
MPU-401 IC Address	330 – 33.H	
Game Port (200 – 207)	Enabled	
↑ ↓ → ← : Move    Enter: Select    + / - / PU / PD: value    F10: save    ESC: Exit    F1: General Help F5 : Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults		

The screen is not as long on your monitor. You can use the arrow keys to scroll up and down the page.

### IDE Channel Settings

The following table explains IDE channel settings and what they mean:

	Values	Meaning
<i>Onchip IDE Channel 0</i>	Enabled	Enables the use of the first (primary) IDE channel.
	Disabled	This will disable the use of the first (primary) IDE channel.
<i>Onchip IDE Channel 1</i>	Enabled	Enables the use of the secondary IDE channel.
	Disabled	This will disable the use of the secondary IDE channel.
<i>xxx PIO</i>	Auto	The BIOS will assign a PIO mode to this device automatically when appropriate
	Mode 0	Select a PIO Mode here. PIO mode 0 is slowest PIO mode 4 is fastest, check your HDD to see what PIO mode it supports. If
	Mode 1	your IDE device supports UDMA mode, then it best to enable that mode since it is considerably faster than PIO mode. (Set to
	Mode 2	auto for auto-detection)
	Mode 3	
<i>xxx – UDMA</i>	Auto	The BIOS will automatically use Ultra DMA Mode if the IDE device supports it.
	Disabled	This will disable the use of Ultra DMA for this device.
<i>IDE HDD Block Mode</i>	Enabled	Block mode allows faster transfer of data between the system and the HDD. Most modern HDDs support it.
	Disabled	Block Mode is not used.

### Display Initialization

	Values	Meaning
<i>Init Display First</i>	PCI Slot	The BIOS will first search for a VGA adapter on the PCI bus, if one is found it will be used as primary display.
	AGP	The AGP Bus is first scanned.

---

### Floppy Drive

	Values	Meaning
<i>Onboard FDD Controller</i>	Enabled	This will allow use of a floppy drive.
	Disabled	If you do not need a floppy drive, set this item to disabled.

### COM ports (Serial Ports)

	Values	Meaning
<i>Onboard serial port 1 / 2</i>	Auto	The bios will automatically use serial ports.
	Disabled	If you do not need the serial port in question, set this item to disabled.
	3F8/IRQ4 2F8/IRQ3 3E8/IRQ4 2E8/IRQ3	Set an IO address and an IRQ to be used by serial ports.

### IR Control

	Values	Meaning
<i>UART 2 Mode</i>	Standard	This will assign UART 2 to serial port 2, the IR port is disabled. The two items below can not be changed.
	ASKIR	Allows use of the IR port in ASKIR mode.
	HPSIR	Allows use of the IR port in ASKIR mode.
<i>IR Function Duplex</i>	Half	Select if your IR device supports Half duplex only.
	Full	For IR devices that support full duplex.
<i>TX, RX inverting enable</i>	No, No	Will not invert any signal
	No, Yes	Will invert the RX signal (Default)
	Yes, No	Will invert the TX signal
	Yes, Yes	Will invert both signals

---

### Parallel Port (Printer Port)

	Values	Meaning
<i>On board Parallel Port</i>	Disable	Disables use of the parallel port.
	3BC / IRQ7	Select an IO Address and an IRQ to be used by the parallel port.
	378 / IRQ7 278 / IRQ5	
<i>On board Parallel Mode</i>	Normal	This is the standard printer port configuration.
	EPP	Enables use of EPP devices.
	ECP	Enables use of EPP devices.
	EPP / ECP	Enables use of EPP / ECP devices.
<i>ECP mode use DMA</i>	1 or 3	Select either DMA channel 1 or 3 (This is only relevant if ECP was selected above). Default is channel 3.
<i>Parallel port EPP type</i>	EPP1.7 or EPP1.9	Select the EPP mode. (This is only relevant if EPP was selected above). Default is EPP1.9.

### Legacy Audio

	Values	Meaning
<i>Onboard Legacy Audio</i>	Enabled	This will software that requires legacy audio (such as DOS) games to function properly.
	Disabled	Legacy Audio is disabled.
<i>Sound Blaster</i>	Enabled	If you added a Sound Blaster or compatible sound card to your system, the three items below allow specifying details about IO and IRQ..
	Disabled	No Sound Blaster (or compatible) cards in the system.
<i>SB IO Base Address</i>	220H – 280H	Specify the IO Base Address for your Sound Blaster card. Choose from 220, 240, 260 and 280H. Default is 220H.
<i>SB IRQ Select</i>	5,7,9,10	Specify the IRQ for your Sound Blaster card. Default is IRQ 5.
<i>SB DMA Select</i>	0, 1, 2, 3	Specify the DMA Channel for your Sound Blaster card. The Default is DMA Channel 1.

---

### MIDI

	Values	Meaning
<i>MPU-401</i>	Enabled	Allows of use of MIDI.
	Disabled	No need for MIDI.
<i>MPU-401 IO address</i>	300 – 303 330 – 333	Select the IO address for the MIDI functionality. Choose from 300 – 303, 310 – 313, 320 – 323 and 330 – 333.

### Game Port

	Values	Meaning
<i>Game Port</i>	Enabled	This will allow you to make use of the game port (joy sticks etc)
	Disabled	If you do not need the game port, set this item to disabled.

---

### 3-3-5 Power Management Setup

Select the [Power Management Setup] option from the Main Menu and press [Enter] key.

<i>CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software</i>		
<i>Power Management Setup</i>		
<i>ACPI Function</i>	<i>Enabled</i>	<i>Item Help</i>
<i>? Power Management</i>	<i>Press Enter</i>	
<i>ACPI Suspend type</i>	<i>S1(POS)</i>	<i>Menu Level ?</i>
<i>PM controlled by APM</i>	<i>Yes</i>	
<i>Video Off Option</i>	<i>Suspend &gt; Off</i>	
<i>Video Off Method</i>	<i>V/H Sync + Blank</i>	
<i>Modem Use IRQ</i>	<i>3</i>	
<i>Soft-Off by FWRBTN</i>	<i>Instant Off</i>	
<i>? Wake UP Events</i>	<i>Press Enter</i>	
<i>↑↓→← : Move    Enter: Select    PU / PD / + / - : value    F10: save    ESC: Exit    F1: General Help</i>		
<i>F5 : Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults</i>		

#### **ACPI Function**

For a detailed description of ACPI and what it does, refer to the FAQ chapter, ACPI section. ACPI can be either enabled or disabled on this BIOS Setup page. For the ACPI Suspend type there are two options:

- S1 (POS)

#### **Power Management**

Pressing [enter] when the power management item is selected will have the following sub menu appear:

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**Power Management**

<i>Power Management</i>	<i>User Define</i>	<i>Item Help</i>
<i>HDD Power Down</i>	<i>Disabled</i>	
<i>Doze Mode</i>	<i>Disabled</i>	<i>Menu Level</i> ??
<i>Suspend Mode</i>	<i>Disabled</i>	

Refer to the following table for an explanation of the items above:

	<b>Values</b>	<b>Meaning</b>
<i>Power Management</i>	User Define	The three items below can be set by the user
	Min Saving	The three items below are set to: disabled, 1 hour, 1 hour respectively.
	Max Saving	The three items below are set to: disabled, 1 min, 1min respectively.
<i>HDD Power Down</i>	1 – 15 Min	Will power down the HDD if it is idle for the amount of minutes selected here.
	Disabled	Will not power down the HDD.
<i>Doze Mode</i>	1 Min to 1 Hour	Selecting a time will force the system into doze mode after being idle for that time. Choose from the following time intervals: 1, 2, 4, 6, 8, 10, 20, 30, 40 min and 1 Hour
	Disabled	The system will never enter doze mode.
<i>Suspend Mode</i>	1 Min to 1 Hour	Selecting a time will force the system into suspend mode after being idle for that time. Choose from the following time intervals: 1, 2, 4, 6, 8, 10, 20, 30, 40 min and 1 Hour
	Disabled	The system will never enter suspend mode.

**PM control**

<i>PM control by APM</i>	Yes	Power Management will be done through the APM (Advanced Power Management) interface. Select this setting for Windows OSes. (Not Win NT)
	No	The BIOS will control PM directly.

---

### Video Options

<i>Video Off Option</i>	Allways On	The monitor will always be on, no matter what the state of the system
	Suspend-> Off	The monitor will be turned of in suspend mode. The item below will specify what off method to use.
	All modes -> Off	The monitor will be turned off in doze and suspend mode. The item below will specify what off method to use.
<i>Video Off Method</i>	Blank Screen	The screen will be blank (black) only.
	V/H sync + blank	The vertical and horizontal sync pulses will be stopped, and the screen will be blank.
	DPMS support	If your monitor supports DPMS, it can be switched off through that.

### Modem IRQ

<i>Modem Use IRQ</i>	NA	This disables the modem IRQ
	3 - 11	Select an IRQ line that will be assigned to your modem here. Choose from: 3 (default), 4, 5, 7, 9, 10, 11.

### Power Button

<i>Soft off by power button</i>	Instant-off	Switches the system off immediately when pressing the power button.
	Delay 4 Sec	This requires you to press the power button for at least 4 seconds before the system switches off.

### Wake Events

When the system has entered doze or suspend mode, it can wake up through a wake event. These wake up events are triggered by interrupts that are monitored by the BIOS. If you press [Enter] when the Wake Up Events item is selected you will see the following sub menu appear:

<b>CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software</b>		
<b>Wake Up Events</b>		
VGA	OFF	Item Help
LPT & COM	LPT / COM	
HDD & FDD	ON	Menu Level ??
PCI Master	OFF	
Modem Ring Resume	Disabled	
RTC Alarm resume	Disabled	
X Date (of Month)	0	
X Resume time (hh:mm:ss)	0 : 0 : 0	
Primary INTR	ON	
? IRQs Activity Monitoring	Press Enter	

Refer to the following table for more details:

VGA	OFF	Will not allow the system to wake up on the VGA IRQ
	ON	When a VGA IRQ occurs the system will wake up.
LPT & COM	None	Neither LPT or COM IRQs will wake the system up.
	LPT	A LPT (printer port) IRQ will wake up the system
	COM	A COM (serial port) IRQ will wake up the system
	LPT/COM	Both LPT and COM can wake up the system
HDD & FDD	OFF	Will not allow the system to wake up on HDD / FDD IRQs
	ON	When a HDD / FDD IRQ occurs the system will wake up.
PCI Master	OFF	Will not allow the system to wake up on a IRQ from a PCI master.
	ON	The system will wake up on a PCI master IRQ.
Modem Ring Resume	Disabled	The system will not wake up on a modem ring signal.
	Enabled	When the modem detects a ring signal, the system will wake up.
RTC Alarm Resume	Disabled	The system will not wake up on a RTC Alarm.
	Enabled	When the time set in the two items below is reached, the RTC will generate an IRQ and the system will wake up.
Date (of Month)	0 - 31	Set the day of month for the system to wake up on.
Resume time	xx:xx:xx	Set the time (hh:mm:ss) for the system to wake up on.

---

<i>Primary INTR</i>	ON	You can select IRQs that allow the system to wake up in the IRQ Activity Monitoring item below.
	OFF	The IRQ Activity Monitoring item is disabled

### IRQ Activity Monitoring

If you select ON for the Primary INTR item, pressing [Enter] on the IRQ Activity Monitoring item will show the following sub menu.

<i>CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software</i>		
<i>Wake Up Events</i>		
		<i>Item Help</i>
<i>IRQ3 (COM 2)</i>	<i>Enabled</i>	
<i>IRQ4 (COM 1)</i>	<i>Enabled</i>	
<i>IRQ5 (LPT 2)</i>	<i>Enabled</i>	<i>Menu Level ???</i>
<i>IRQ6 (Floppy Disk)</i>	<i>Enabled</i>	
<i>IRQ7 (LPT 1)</i>	<i>Enabled</i>	
<i>IRQ8 (RTC Alarm)</i>	<i>Disabled</i>	
<i>IRQ9 (IRQ2 Redirection)</i>	<i>Disabled</i>	
<i>IRQ10 (Reserved)</i>	<i>Disabled</i>	
<i>IRQ11 (Reserved)</i>	<i>Disabled</i>	
<i>IRQ12 (PS/2 Mouse)</i>	<i>Enabled</i>	
<i>IRQ13 (Coprocessor)</i>	<i>Enabled</i>	
<i>IRQ14 (HDL)</i>	<i>Enabled</i>	
<i>IRQ15 (Reserved)</i>	<i>Disabled</i>	

You can select IRQs that will allow the system to wake up if activity is detected on them. Setting to enabled allows an IRQ to wake up the system.

### 3-3-6 PnP / PCI Configurations

Select the [PnP / PCI Configurations] option from the Main Menu and press [Enter] key.

<b>CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software</b>		
<b>PnP / PCI Configurations</b>		
		<i>Item Help</i>
PnP OS Installed	NO	
Reset Configuration Data	Disabled	
Resources Controlled by	Auto (ES CD)	Menu Level ?
X IRQ Resources	Press Enter	Select Yes if you are using a Plug and Play capable operating system Select
X DMA Resources	Press Enter	No if you need the BIOS to configure non-boot devices.
PCI/VGA Palette snoop	Disabled	
Assign IRQ for VGA	Enabled	
Assign IRQ for 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		

#### PnP Aware OS

	Values	Meaning
PnP OS Installed	No	If your OS is not capable of handling PnP (Such as Win NT) this item should be set to No.
	Yes	If your OS is PnP aware (Such as windows 95, 98, 2000 etc) set this item to Yes.

#### Reset Configuration Data

	Values	Meaning
Reset Configuration Data	Disabled	This will not reset the system configuration data (IRQs, DMAs) on reboot.
	Enabled	This will reset the configuration data. Remember to enable this item every time you make a change to your system (such as switching PCI cards etc).

---

### PCI / VGA Palette Snoop

	Values	Meaning
<i>PCI / VGA Palette Snoop</i>	Disabled	Default setting.
	Enabled	This will allow the system to look at the palette the VGA uses to display. Some applications speed up with this setting but it is mostly obsolete.

### Assign IRQs

	Values	Meaning
<i>Assign IRQ for VGA</i>	Enabled	This will assign an interrupt to your VGA card. Make sure to enable this item if your card needs one.
	Disabled	The BIOS will not assign an interrupt to the VGA card
<i>Assign IRQ for USB</i>	Enabled	If you plan to make use of USB devices, set this item to enabled.
	Disabled	The BIOS will not assign an interrupt to USB.

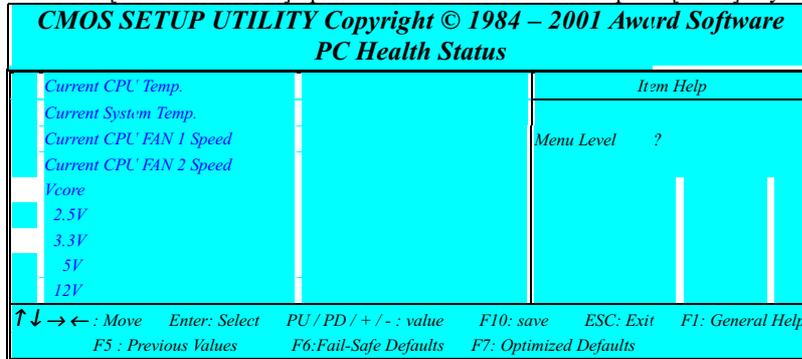
### Resources

If you set the Resources Controlled by item to Auto (ESCD), the BIOS will manage all resources for you. If you set it to manual to two items below will allow you to assign the resources manually.

	Values	Meaning
<i>IRQ-x assigned to (x = 3 to 15)</i>	PCI/ISA	This setting means the BIOS will assign the interrupt as needed.
	PnP	This means that it is not fixed to a device
	Legacy ISA	If you need to make sure that a certain interrupt is assigned to an ISA device, set that interrupt to legacy ISA.
<i>DMA-x assigned to (x = 0, 1, 3, 5, 6, 7)</i>	PCI/ISA	This setting means the BIOS will assign the DMA Channel as needed, it is not fixed to a device
	PnP	
	Legacy ISA	If you need to make sure that a certain DMA channel is assigned to an ISA device, set that channel to legacy ISA.

### 3-3-7 PC Health Status

Select the [PC Health Status] option from the Main Menu and press [Enter] key.



The values shown in this picture are just examples, the values shown on screen reflect the real status of your system. All items on this page are read only. A short description of each item follows:

	Meaning
Current CPU Temp.	This item reflects the CPU temperature as measured by RT1, the thermistor located under the CPU. Temperatures over 60 degrees are too high and a better cooling solution must be found for the CPU
Current system Temp.	This item reflects the system temperature as measured by RT2, the thermistor located close to the BIOS IC. Temperatures over 45 degrees are too high and a better cooling solution must be found for the computer case (like adding a case FAN)
Current CPU FAN 1 Speed	The speed of the CPU FAN connected to FAN 1 is displayed here. If you have problems with this item, please refer to the FAQ chapter boot section.
Current CPU FAN 2 Speed	The speed of the CPU FAN connected to FAN 2 is displayed here
Voltage X	The Voltage for the voltage line (Vcore, 3.3V, 5V, 12V) are displayed here. A small deviation of the ideal value is not a problem because voltages always fluctuate.

### 3-3-8 Frequency / Voltage Control

Select the [Frequency / Voltage Control] option from the Main Menu and press [Enter] key.

CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software		
Frequency / Voltage Control		
Auto Detect DIMM / PCI Clock	Enabled	Item Help
Spread Spectrum Modulated	Disabled	
CPU Host / PCI Clock	Default	Menu Level ?
↑↓ → ← : Move    Enter: Select    +/- / PU / PD: value    F10: save    ESC: Exit    F1: General Help F5 : Previous Values    F6:Fail-Safe Defaults    F7: Optimized Defaults		

The following table will explain the items in more detail:

	Values	Meaning				
Auto Detect DIMM / PCI Clock	Enabled	If set to enabled the BIOS will detect the values for the PCI and DIMM clocks				
	Disabled	If disabled, the BIOS will use the values set on this page and on the Advanced Chipset Features page.				
Spread Spectrum Modulated	Enabled	If set to enabled, the clock generator will modulate each clock signal with a low frequency signal. This will improve EM (Electro-Magnetic) Interference.				
	Disabled	The clock generator will not modulate the clock signals				
CPU Host / PCI Clock	Default	This item allows setting of the CPU and PCI bus frequencies. If set to default, the BIOS will select the values automatically. Otherwise, if you have a 100MHz FSB CPU we recommend you use the 100 / 33 Setting. If you have a 133Mhz FSB CPU we recommend you use the 133 / 33 setting. Any other setting will make the system operate without it specifications and we can not guarantee proper functioning in that case. The other settings are:				
	Or					
	100/33 – 117/39					
	100 / 33		105 / 35	107 / 35	109 / 36	110 / 37
	115 / 38		117 / 39	133 / 33	135 / 33	137 / 34
	139 / 34		140 / 35	143 / 35	145 / 36	150 / 37

---

### 3-3-9 Passwords

The BIOS Setup program allows you to specify passwords in the Main menu. The passwords control access to the BIOS during system startup. The passwords are not case sensitive. In other words, it makes no difference whether you enter a password using upper or lowercase letters. The BIOS Setup program allows you to specify two separate passwords:

- Supervisor password
- User password.

The function of the supervisor password depends on the setting for the Security Option item on the Advanced BIOS Features page. If set to System, the supervisor password must be given every time the system boots, if set to setup, the password must be given only when you want to enter the BIOS Setup.

The user password has the same functionality, with the only difference that anybody logging in with the user password may only change the user password when entering the BIOS Setup page. All other items in the BIOS Setup will be disabled (unchangeable). When both passwords are disabled, anyone may access all BIOS Setup program functions.

#### Setting the password

To set the Supervisor password, select the Set Supervisor Password item in the main BIOS Setup Menu. Now a dialog will pop up asking you to enter a password.

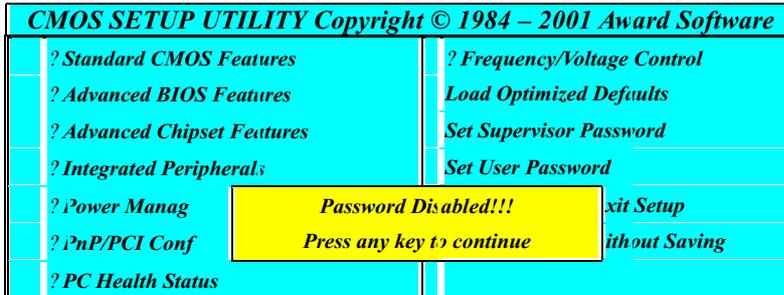
<i>CMOS SETUP UTILITY Copyright © 1984 – 2001 Award Software</i>	
<i>? Standard CMOS Features</i>	<i>? Frequency/Voltage Control</i>
<i>? Advanced BIOS Features</i>	<i>Load Optimized Defaults</i>
<i>? Advanced Chipset Features</i>	<i>Set Supervisor Password</i>
<i>? Integrated Peripherals</i>	<i>Set User Password</i>
<i>? Power Manag</i>	<i>ord</i>
<i>? PnP/PCI Conf</i>	<i>Enter Password:</i>
<i>? PC Health Status</i>	<i>up</i>
	<i>Exit without Saving</i>

Now you can enter your password, after entering the password the menu will pop up again and will ask you to reconfirm the password. After entering and pressing [enter] the password will be stored to CMOS RAM and the password will be enabled.

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### Disabling the password

To disable the password, simply press [enter] without entering any other letters or numbers. This will disable the password, the BIOS will tell you by displaying the following dialog:



### Password Unknown

If you forgot the password, you can clear the password by erasing the CMOS RAM. The RAM data containing the password information is powered by the onboard button cell battery. Please refer to the CMOS RAM section earlier in this chapter. After clearing the CMOS memory, hold down <Delete> during bootup and enter BIOS setup to re-enter user preferences.

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## Chapter 4      Q & A

### 4-1    Error Messages During Power on Self Test

During **power on self test (post)**, BIOS will automatically detect the system devices. Below are the questions that users most often ask. The user may press “**Esc**” key to skip the full memory test.

#### **1.      *Beep sound***

While power on, the system makes beep sound to offer different messages. If the system is configured correctly, it prompts a short beep to show device configuration is done correctly. When VGA card and DIMM modules are not plugged well, the system makes longer and constant beep sounds.

#### **2.      *BIOS ROM checksum error***

It indicates the checksum of the BIOS code is not right and system will always halt on power on screen. Contact the dealer to exchange a new BIOS.

#### **3.      *CMOS battery fail***

It indicates the CMOS battery does not work. Contact the dealer to exchange a new battery.

#### **4.      *CMOS checksum error***

It indicates the CMOS checksum is incorrect. Load the default values in BIOS to solve this problem. This error may result from weak BIOS, so replace new BIOS if necessary.

#### **5.      *Hard disk initiation***

**Please wait a moment...**

Some hard drives require more time to initiate.

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**6. *Hard disk install failure***

The system can not find or initiate the hard drive controller or the drive. Check if the controller is set correctly. If no hard disk is installed, “**Hard drive selection**” must be set to “**none.**”

**7. *Keyboard error or no keyboard present***

This means the system can not initialize the keyboard. Check if the keyboard is plugged well and be sure no keys are pressed during POST.

**8. *Keyboard is lock out - Unlock the key***

When this message comes out, check if there is anything mis-placed on the keyboard. Be sure nothing touches the keys.

**9. *Memory test fails***

There will be more information to specify the type and location of the memory error.

**10 *Primary master hard disk fail***

The BIOS finds an error in the primary master hard disk drive.

**11 *Primary slave hard disk fail***

The BIOS finds an error in the primary slave hard disk drive.

**12 *Secondary master hard disk fail***

The BIOS finds an error in the secondary slave master hard disk drive.

**13 *Secondary slave hard disk fail***

The BIOS finds an error in the secondary slave IDE hard disk drive

