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## **Federal Communications Commission (F.C.C) Statement**

This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Accessories: This device has been tested and found to comply with the limits of a Class B digital device, the accessories associated with this equipment are as follows:

1. Shielded serial cable. (Can be obtained from multiple retail outlets)
2. Shielded printer cable. (Can be obtained from multiple retail outlets)
3. Shielded video cable. (Can be obtained from multiple retail outlets)
4. Shielded power cord. (Provided by manufacturer)

These accessories are required to be used in order to ensure compliance with FCC Rules. It is the responsibility of the user to provide and use these accessories properly.

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient / Relocate the receiving antenna.
  2. Increase the separation between the equipment and receiver.
  3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  4. Consult the dealer or an experienced radio/TV technician for help.
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Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

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## **Canadian D.O.C. Statement**

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Cet appareil numérique n'émet pas de bruits radioélectriques dépassant les limites appliquées aux appareils numériques de Class B prescrits dans le règlement du brouillage radioélectrique édicté par le ministre Des Communications du Canada.

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## Introduction

### System Overview

Thanks for buying this product! This manual was written to help you start using this product as quickly and smoothly as possible. Inside you will find adequate explanations to solve most problems. In order for this reference material to be of greatest use, refer to the “expanded table of contents” to find relevant topics.

This board incorporates the system board, ISA I/O, and PCI IDE into one board that provides a total PC solution. The mainboard, a AMD-Athlon processor based PC/ATX system, supports single processors with ISA Bus, PCI Local Bus, and AGP Bus to support upgrades to your system performance. It is ideal for multi-tasking and fully supports MS-DOS, Windows, Windows NT, Windows 2000, Novell, OS/2, Windows95/98, UNIX, SCO UNIX etc. This manual also explains how to install the mainboard for operation, and how to setup your CMOS configuration with the BIOS setup program.

# 1 Motherboard Description

## 1.1 Features

### 1.1.1 Hardware

#### CPU

- Single Slot-A for AMD-Athlon processor Module-500MHz and faster.
- 200MHz System Interface speed.

#### Speed

- Supports 33MHz PCI Bus speed.
- I/O clock 8MHz for ISA Bus.
- Supports 66MHz / 133MHz AGP Bus.

#### DRAM Memory

- Supports 8/16/32/64.....MB DIMM module socket.
- Supports Synchronous DRAM (3.3V).
- Supports a maximum memory size of 768MB with SDRAM.

#### Shadow RAM

- A memory controller provides shadow RAM and supports 8-bit ROM BIOS.

#### Green Function

- Supports power management operation via BIOS.
- Power down timer from 1 to 15 mins.
- Wakes from power saving sleep mode at the press of any key or any mouse activity.

#### BUS Slots

- Provides two 16-bit ISA Bus slots, five PCI Bus slots, and one AGP Bus slot.

**Flash Memory**

- Supports flash memory.
- Supports ESCD Function.

**PCI Enhanced IDE Built-in On Board**

- Supports four IDE hard disk drives.
- Supports PIO Mode 4, Master Mode, high performance hard disk drives.
- Supports Ultra DMA/66, Bus Master Mode.
- Supports IDE interface with CD-ROM.
- Supports high capacity hard disk drives.
- Supports LBA mode.

**ISA I/O Built-in On Board**

- Supports one multi-mode Parallel Port.
  - (1) Standard & Bidirection Parallel Port.
  - (2) Enhanced Parallel Port (EPP).
  - (3) Extended Capabilities Port (ECP).
- Supports two serial ports, 16550 UART.
- Supports one Infrared transmission (IR). (optional)
- Supports PS/2 Mouse.
- Supports 360KB, 720KB, 1.2MB, 1.44MB, and 2.88MB floppy disk drivers.

**Universal Serial Bus**

- Supports two back Universal Serial Bus (U.S.B.) Ports and two front Universal serial Bus (U.S.B) Ports.
- Supports 48 MHz USB.

**Hardware Monitor Function**

- CPU Fan Speed Monitor.
- System and CPU Temperature Monitor.
- System Voltage Monitor.

**Dimensions (ATX form-factor)**



- 30.48 cm X 21.3 cm (W x L)

### **1.1.2 Software**

#### **BIOS**

- AWARD legal BIOS.
- Supports APM1.2.
- Supports USB Function.
- Supports ACPI.

#### **Operating System**

- Offers the highest performance for MS-DOS, OS/2, Windows, Windows NT, Windows 2000, Windows 95/98, Novell, UNIX, SCO UNIX etc.

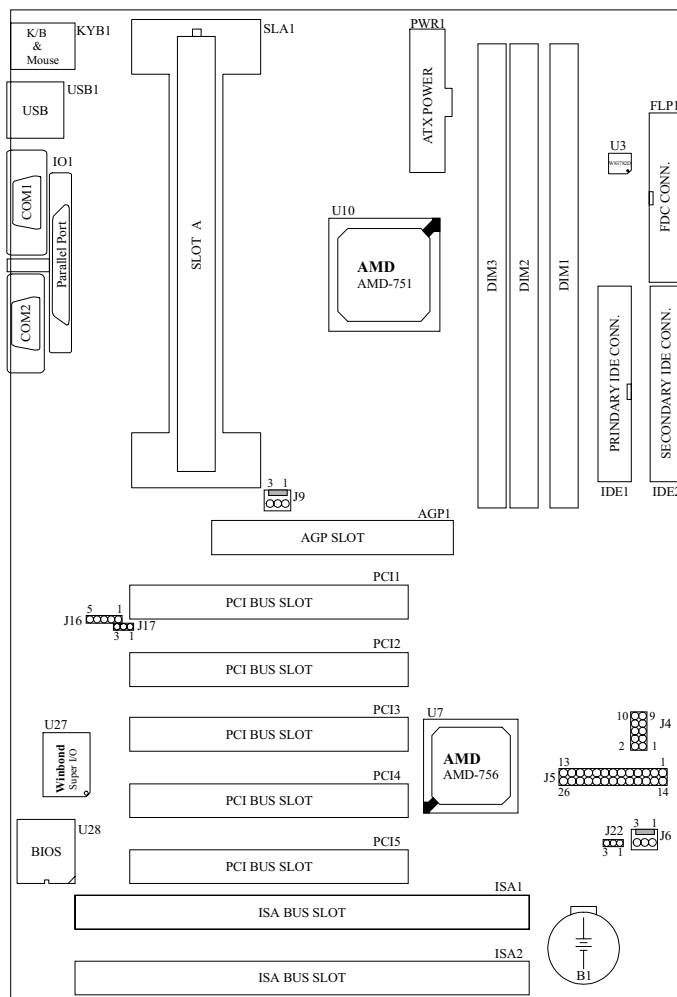
### **1.1.3 Attachments**

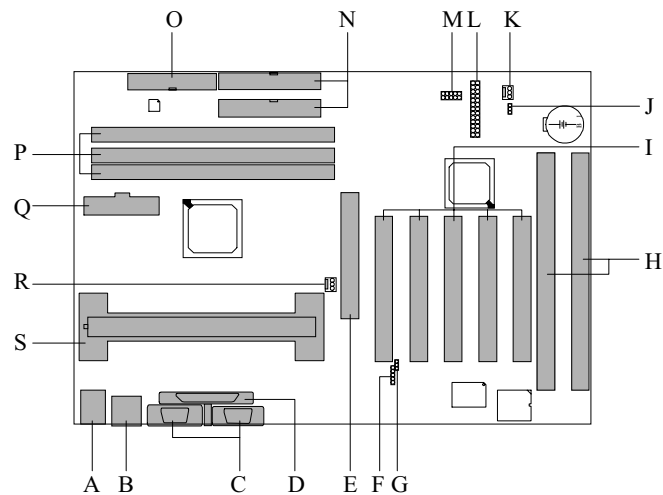
- HDD Cable.
- FDD Cable.
- Flash Memory Writer for BIOS Update.
- Retention Kits for CPU.
- IDE and Hardware Monitor Setup Driver CD.
- Rear I/O panel for ATX Case (optional).

## 1.2 Motherboard Installation

### 1.2.1 Layout of Motherboard

Model No.M7MKA

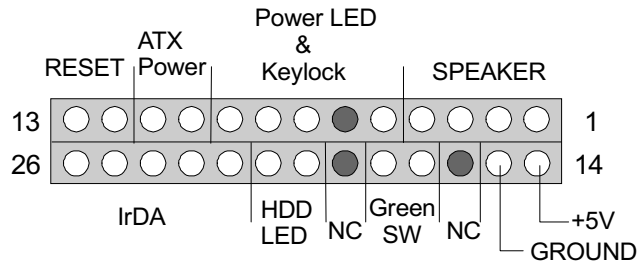




## 1.3 Motherboard Connectors

- |                                  |                               |
|----------------------------------|-------------------------------|
| A. K/B & Mouse CONN. (KYB1)      | K. System Fan connector (J6)  |
| B. USB connector (USB1)          | L. Front Panel connector (J5) |
| C. COM Ports (COM1/COM2)         | M. Front USB Connector (J4)   |
| D. Parallel Port (IO1)           | N. IDE connectors (IDE1-2)    |
| E. AGP Slot (AGP1)               | O. FDD connector (FLP1)       |
| F. Wake-On MODEM CONN. (J16)     | P. DIMMs (DIM1-3)             |
| G. Wake-On-LAN CONN. (J17)       | Q. ATX Power connector (PWR1) |
| H. ISA BUS Slots (ISA1-2)        | R. CPU FAN connector (J9)     |
| I. PCI BUS Slots (PCI1-5)        | S. CPU Slot (SLA1)            |
| J. CMOS Function Selection (J22) |                               |

### 1.3.1 Front Panel Connectors (J5)



Pin No.	Assignment	Function	Pin No.	Assignment	Function
1	Speaker	Speaker Connector	14	+5V	VCC
2	NC		15	Ground	Ground
3	Ground		16	No Connection	NC
4	+5V		17	Green Control	Green
5	Power LED(+)	Power LED & Keylock	18	Ground	Switch
6	No Connection		19	No Connection	NC
7	Ground		20	HDD LED(-)	HDD
8	Key lock		21	HDD LED(+)	LED
9	Ground	ATX Power Button	22	+5V	IrDA Connector
10	Power Switch		23	No Connection	
11	Standby Voltage		24	IRRX	
12	Reset Control		25	Ground	
13	Ground	Reset	26	IRTX	

**Speaker Connector**

An offboard speaker can be installed on the motherboard as a manufacturing option. An offboard speaker can be connected to the motherboard at the front panel connector. The speaker (onboard or offboard) provides error beep code information during the Power On Self-Test when the computer cannot use the video interface. The speaker is not connected to the audio subsystem and does not receive output from the audio subsystem.

**Reset Connector**

This connector can be connected to a momentary SPST type switch that is normally open. When the switch is closed, the motherboard resets and runs the POST.

**Power LED Connector**

This connector can be connected to an LED that will light when the computer is powered on.

**Hard Drive LED Connector**

This connector can be connected to an LED to provide a visual indicator that data is being read from or written to a hard drive. For the LED to function properly, an IDE drive must be connected to the onboard hard drive controller.

**Infrared Connector**

After the IrDA interface is configured, files can be transferred from or to portable devices such as laptops, PDAs, and printers using application software.

**Sleep/Resume Switch Connector**

When APM is enabled in the system BIOS, and the operating system's APM driver is loaded, the system can enter sleep (standby) mode in one of the following ways:

**Prolonged system inactivity using the BIOS inactivity timer feature**

The 2-pin connector located on the front panel I/O connector supports a front panel sleep/resume switch, which must be a momentary SPST type that is normally open.

Closing the sleep/resume switch sends a System Management Interrupt ( SMI) to

the processor, which immediately goes into SMM(Sleep Management Mode) . While the computer is in sleep mode, it is fully capable of responding to and servicing external interrupts ( such as an incoming fax) even though in this case the monitor turns on only when a keyboard or mouse interrupt occurs. To reactivate or resume system operation, the sleep/resume switch must be pressed again, or the keyboard or mouse must be used.

### **ATX Power Connector**

This connector can be connected to a front panel power switch. The switch must pull the Power Button pin to ground for at least 50 ms to signal the power supply to switch on or off. (The time requirement is due to internal debounce circuitry on the motherboard.) At least two seconds must pass before the power supply will recognize another on/off signal.

### **1.3.2 Floppy Disk Connector (FLP1)**

The motherboard provides a standard floppy disk connector (FDC) that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.

### **1.3.3 Hard Disk Connectors (IDE1/IDE2)**

The motherboard has a 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~4, Bus Master, and Ultra DMA / 33, Ultra DMA / 66 functionality. It has two HDD connectors IDE1 (primary) and IDE2 (secondary). You can connect up to four hard disk drives, a CD-ROM, a 120MB Floppy (reserved for future BIOS) and other devices to IDE1 and IDE2. These connectors support the IDE hard disk cable provided.

#### **IDE1 (Primary IDE Connector)**

The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure the second hard drive on IDE1 to Slave mode by setting the jumper accordingly.

#### **IDE2 (Secondary IDE Connector)**

The IDE2 controller can also support a Master and a Slave drive. The configuration is similar to IDE1. The second drive on this controller must be set

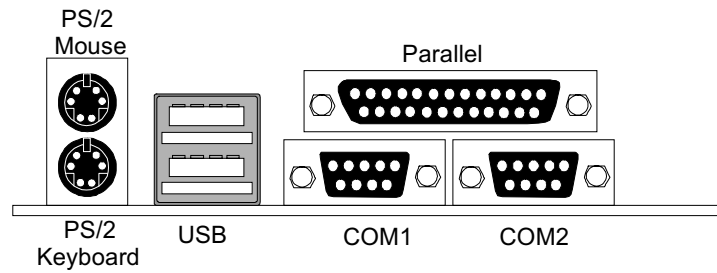
to slave mode.

### 1.3.4 ATX 20-pin Power Connector (PWR1)

This connector supports the power button on-board. Using the ATX power supply, functions such as Modem Ring Wake-Up and Soft Power Off are supported on this motherboard. This power connector supports instant power-on functionality, which means that the system will boot up instantly when the power connector is inserted on the board.

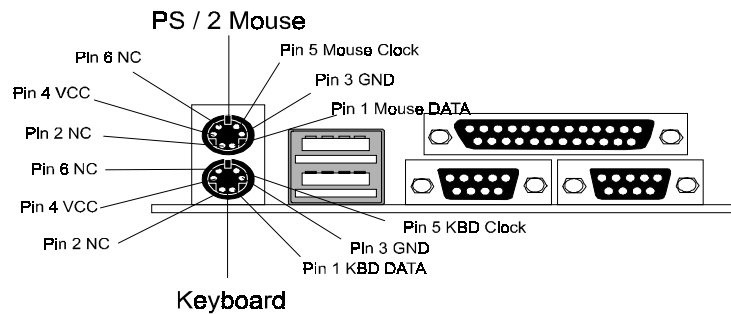
PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

## 1.4 Back Panel Connectors



### 1.4.1 PS/2 Mouse / Keyboard Connector (KYB1)

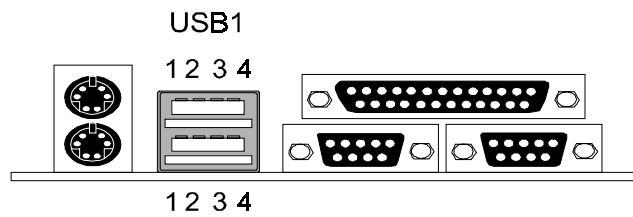
The motherboard provides a standard PS/2 mouse / Keyboard mini DIN connector for attaching a PS/2 mouse. You can plug a PS/2 mouse / Keyboard directly into this connector. The connector location and pin definition are shown below:





**PS/2 Mouse / Keyboard Connectors**

Pin	Signal Name
1	Data
2	No connect
3	Ground
4	+5 V (fused)
5	Clock
6	No connect

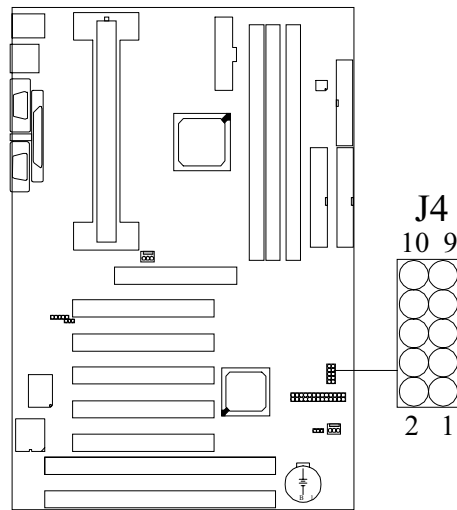
**1.4.2 USB Connectors (USB1/J4)**

The motherboard provides a **OHCI (Open Host Controller Interface) Universal Serial Bus Roots** for attaching USB devices such as: keyboard, mouse and other USB devices. You can plug the USB devices directly into this connector.

**Stacked USB Connectors**

Pin	Signal Name
1	+5 V (fused)
2	USBP0- [USBP1-]
3	USBP0+ [USBP1+]
4	Ground

Signal names in brackets ([ ]) are for USB Port 1.

**Front Two USB Connector (J4)**

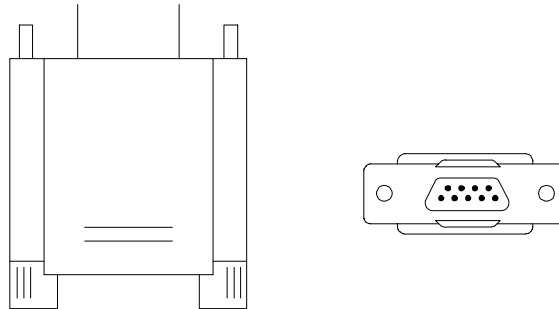
Pin	Signal Name	Pin	Signal Name
1	+5V	2	Ground
3	USBP2-	4	Ground
5	USBP2+	6	USBP3+
7	Ground	8	USBP3-
9	Ground	10	+5V

## 1.5 Serial and Parallel Interface Ports

This system comes equipped with two serial ports and one parallel port. Both types of interface ports will be explained in this chapter.

### The Serial Interface: COM1/COM2

The serial interface port is sometimes referred to as an RS-232 port or an asynchronous communication port. Mice, printers, modems and other peripheral devices can be connected to a serial port. The serial port can also be used to connect your computer with another computer system. If you wish to transfer the contents of your hard disk to another system it can be accomplished by using each machine's serial port.



The serial ports on this system have two 9-pin connectors. Some older computer systems and peripherals used to be equipped with only one 25-pin connector. Should you need to connect your 9-pin serial port to an older 25-pin serial port, you can purchase a 9-to-25 pin adapter.

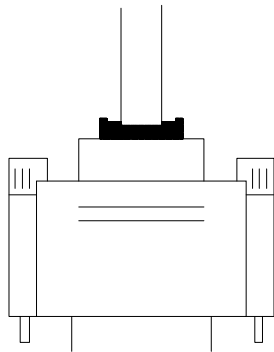
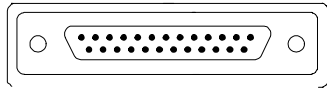
**Connectivity**

The serial ports can be used in many ways, and it may be necessary to become familiar with the pinout diagram. The following chart gives you the function of each pin on the 9-pin connector and some of the 25-pin connector. This information can be used when configuring certain software programs to work with the serial ports.

<b>Signal</b>	<b>Name</b>	<b>DB9 PIN</b>	<b>DB25 PIN</b>
DCD	Data Carrier Detect	1	8
RX	Receive Data	2	3
TX	Transmit Data	3	2
DTR	Data Terminal Ready	4	20
GND	Signal Ground	5	7
DSR	Data Set Ready	6	6
RTS	Request to Send	7	4
CTS	Clear to Send	8	5
RI	Ring Indicator	9	22

### Parallel Interface Ports

Unlike the serial ports, parallel interface port has been standardized and should not present any difficulty interfacing peripherals to your system. Sometimes called Centronics port, the parallel port is almost exclusively used with printers. The parallel port on your system has a 25-pin, DB5 connector (see picture below). The pinouts for the parallel port are shown in the table below.



Signal	Pin
-Strobe	1
Data 0	2
Data 1	3
Data 2	4
Data 3	5
Data 4	6
Data 5	7
Data 6	8
Data 7	9
-Ack	10
Busy	11
Paper Empty	12
+Select	13
-Auto FDXT	14
-Error	15
-Init	16
-SLCTN	17
Ground	18
Ground	19
Ground	20
Ground	21
Ground	22
Ground	23
Ground	24
Ground	25

## 1.6 CPU Installation

### 1.6.1 CPU Installation Procedure

#### Motherboard

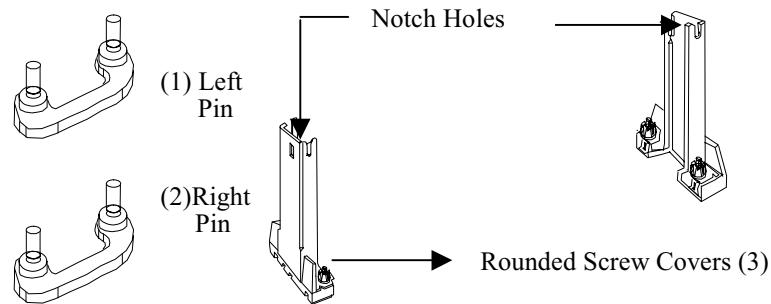
The motherboard provides one Single Slot-A.  
This slot allows you to install a AMD-Athlon CPU.

#### Before you use:

Please look on your motherboard and locate the CPU fan and CPU fan power supply. Please verify that this fan is directly used to cool the CPU, its heat sink, the motherboard and circulate the air.

**WARNING : If air circulation is insufficient, the CPU will overheat, which may damage the CPU, CPU slot, and the motherboard.**

Please inspect your motherboard to see if it has the AMD-Athlon CPU retention kit components. (ATTENTION: The CPU installation component color and shape may vary slightly based on kits coming from different suppliers.)

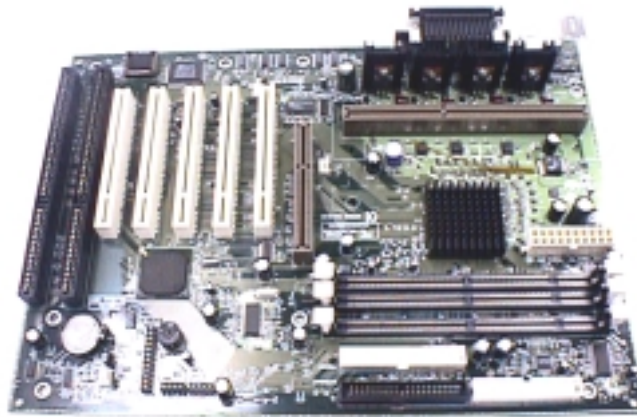


**Athlon Heat Sink Pins**

**Athlon Heat Sink**

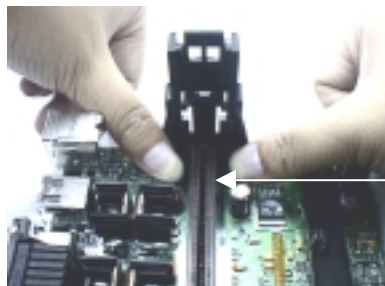
## M7MKA CPU Special Installation and Setup :

### AMD-Athlon CPU:



#### 1 · Installing the Heat Sink Support Frame :

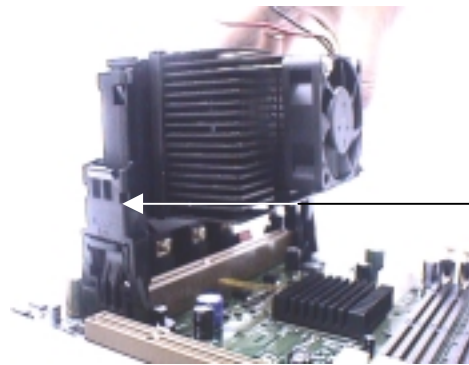
The Heat Sink Support Base can only be inserted in one-way. Please match the leg sizes on the Heat Sink Support Base to the holes on the motherboard. Please insert the screws from the bottom of the motherboard and tighten into the rounded screw covers.



Lock in

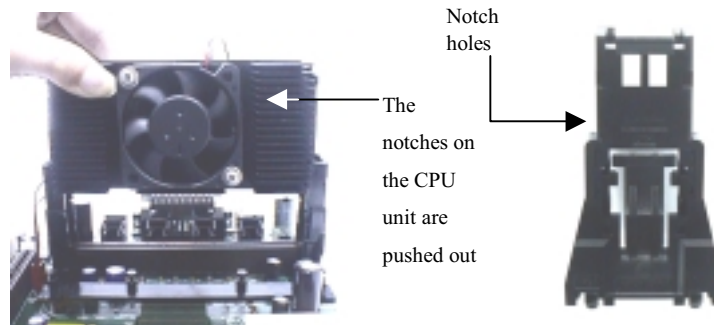
**2 · Insert the CPU into the SEC Solt :**

- (1) First, press the CPU unit into the Frame until it fits snugly into the notch holes. Then, clip the Heat Sink and CPU together with the Heat Sink Support Frame.



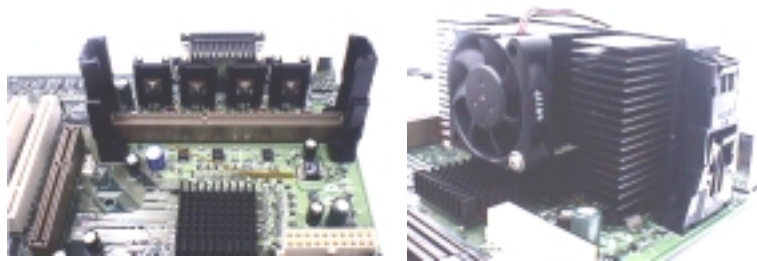
The correct direction to insert the Heat Sink and CPU into the Heat Sink Support Frame should allow you easily to insert them.

- (2) Pushing the CPU unit into the frame, and waiting until the CPU unit is firmly in position before securing. The notches are pushed out. They will fit tightly into the Heat Sink Frame Notch holes.



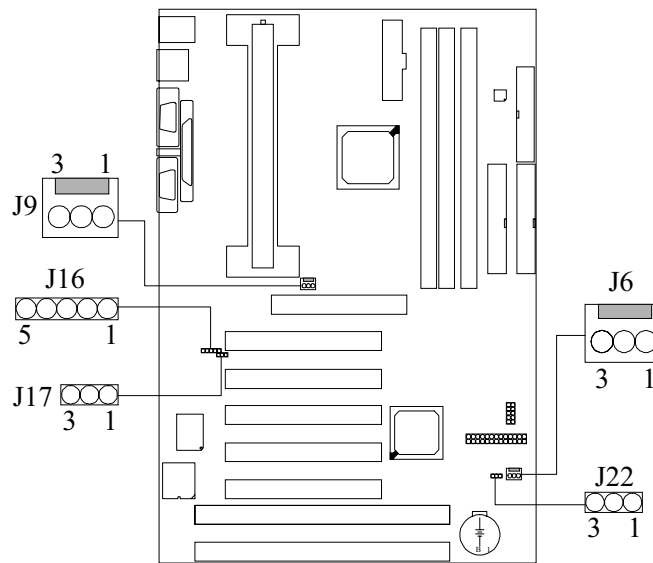


- (2) Firmly secure the Heat Sink by attaching the Heat Sink Frame TOP-Bar. Please verify that the Heat Sink and CPU are tightly pressed together. Please check that the entire Frame, Heat Sink, and CPU unit are tightly installed and that there is no possible movement or looseness in the assembly.



## 1.7 Jumper Settings

A jumper is two or more pins which may be covered by a plastic jumper cap, allowing you to select different system options.



### 1.7.1 System Fan Connector (J6)

Pin No.	Assignment
1	Ground
2	Control Signal
3	Senser Input

**1.7.2 CPU Fan Connector (J9)**

Pin No.	Assignment
1	Ground
2	Control Signal
3	Senser Input



**1.7.3 Wake-On MODEM Header (J16)**

Pin No.	Assignment
1	NC
2	Ground
3	Wake Up Signal
4	NC
5	+5V

**1.7.4 Wake-On-LAN Header (J17)**

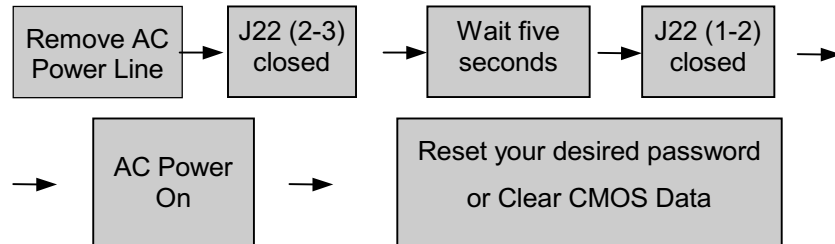
Pin No.	Assignment
1	+5 V Standby Voltage
2	Ground
3	MP-Wakeup

### 1.7.5 CMOS Function Selection (J22)

J22	Assignment
1  3 1-2 Closed	Normal Operation (default)
1  3 2-3 Closed	Clear CMOS Data

Note : Please follow the procedure as below to clear CMOS Data.

Note : Please follow the procedure as below to clear BIOS Password if your password is lost or forgotten.



## 1.8 DRAM Installation

### 1.8.1 DIMM

DRAM Access Time : 3.3V Unbuffered SDRAM PC100 Type required.

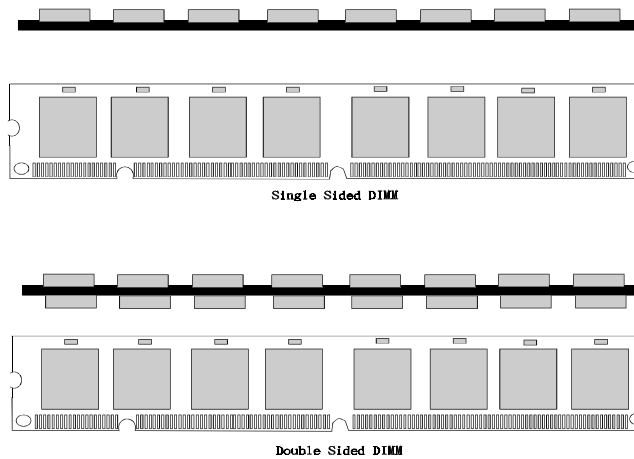
DRAM Type : 8MB/ 16MB/ 32MB/ 64MB/ 128MB/ 256MB DIMM Module (168pin)

Total	Bank 0	Bank 1	Bank 2
Memory Size (MB)	DIMM1	DIMM2	DIMM3
8 M	8M x 1 pc	----	----
16 M	16M x 1 pc	----	----
32 M	32M x 1 pc	----	----
64 M	64M x 1 pc	----	----
128 M	128M x 1 pc	----	----
256 M	256M x 1 pc	----	----
16 M	8M x 1 pc	8M x 1 pc	----
32 M	16M x 1 pc	16M x 1 pc	----
64 M	32M x 1 pc	32M x 1 pc	----
128 M	64M x 1 pc	64M x 1 pc	----
256 M	128M x 1 pc	128M x 1 pc	----
512 M	256M x 1 pc	256M x 1 pc	----
24 M	8M x 1 pc	8M x 1 pc	8M x 1 pc
40 M	16M x 1 pc	16M x 1 pc	8M x 1 pc
72 M	32M x 1 pc	32M x 1 pc	8M x 1 pc
136 M	64M x 1 pc	64M x 1 pc	8M x 1 pc
264 M	128M x 1 pc	128M x 1 pc	8M x 1 pc
520 M	256M x 1 pc	256M x 1 pc	8M x 1 pc
32 M	8M x 1 pc	8M x 1 pc	16M x 1 pc
48 M	16M x 1 pc	16M x 1 pc	16M x 1 pc
80 M	32M x 1 pc	32M x 1 pc	16M x 1 pc
144 M	64M x 1 pc	64M x 1 pc	16M x 1 pc
272 M	128M x 1 pc	128M x 1 pc	16M x 1 pc
528 M	256M x 1 pc	256M x 1 pc	16M x 1 pc

<b>Total</b>	<b>Bank 0</b>	<b>Bank 1</b>	<b>Bank 2</b>
<b>Memory Size (MB)</b>	<b>DIMM1</b>	<b>DIMM2</b>	<b>DIMM3</b>
48 M	8M x 1 pc	8M x 1 pc	32M x 1 pc
64 M	16M x 1 pc	16M x 1 pc	32M x 1 pc
96 M	32M x 1 pc	32M x 1 pc	32M x 1 pc
160 M	64M x 1 pc	64M x 1 pc	32M x 1 pc
288 M	128M x 1 pc	128M x 1 pc	32M x 1 pc
544 M	256M x 1 pc	256M x 1 pc	32M x 1 pc
80 M	8M x 1 pc	8M x 1 pc	64M x 1 pc
96 M	16M x 1 pc	16M x 1 pc	64M x 1 pc
128 M	32M x 1 pc	32M x 1 pc	64M x 1 pc
192 M	64M x 1 pc	64M x 1 pc	64M x 1 pc
320 M	128M x 1 pc	128M x 1 pc	64M x 1 pc
576 M	256M x 1 pc	256M x 1 pc	64M x 1 pc
144 M	8M x 1 pc	8M x 1 pc	128M x 1 pc
160 M	16M x 1 pc	16M x 1 pc	128M x 1 pc
192 M	32M x 1 pc	32M x 1 pc	128M x 1 pc
256 M	64M x 1 pc	64M x 1 pc	128M x 1 pc
384 M	128M x 1 pc	128M x 1 pc	128M x 1 pc
640 M	256M x 1 pc	256M x 1 pc	128M x 1 pc
272 M	8M x 1 pc	8M x 1 pc	256M x 1 pc
288 M	16M x 1 pc	16M x 1 pc	256M x 1 pc
320 M	32M x 1 pc	32M x 1 pc	256M x 1 pc
384 M	64M x 1 pc	64M x 1 pc	256M x 1 pc
512 M	128M x 1 pc	128M x 1 pc	256M x 1 pc
768 M	256M x 1 pc	256M x 1 pc	256M x 1 pc

\*The list shown above for DRAM configuration is only for reference.

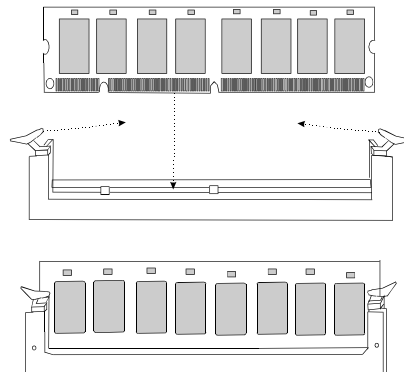
## 1.8.2 How to install a DIMM Module



1. The DIMM socket has a “ Plastic Safety Tab” and the DIMM memory module has an asymmetrical notch”, so the DIMM memory module can only fit into the slot in one direction.

2. Push the tabs out. Insert the DIMM memory modules into the socket at a 90-degree angle then push down vertically so that it will fit into place.

3. The Mounting Holes and plastic tabs should fit over the edge and hold the DIMM memory modules in place.



## 2. BIOS Setup

### Introduction

This manual discussed Award™ Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The Award BIOS™ installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. This means that it supports AMD-Athlon processors input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

Adding important has customized the Award BIOS™, but nonstandard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

### Plug and Play Support

These AWARD BIOS supports the Plug and Play Version 1.0A specification. ESCD (Extended System Configuration Data) write is supported.

### EPA Green PC Support

This AWARD BIOS supports Version 1.03 of the EPA Green PC specification.

### APM Support

These AWARD BIOS supports Version 1.1&1.2 of the Advanced Power Management (APM) specification. Power management features are implemented via the System Management Interrupt (SMI). Sleep and Suspend power management modes are supported. Power to the hard disk drives and video monitors can be managed by this AWARD BIOS.



### PCI Bus Support

This AWARD BIOS also supports Version 2.1 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

### DRAM Support

SDRAM (Synchronous DRAM) are supported.

### Supported CPUs

This AWARD BIOS supports a single AMD-Athlon CPU.

### Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program by using the keyboard.

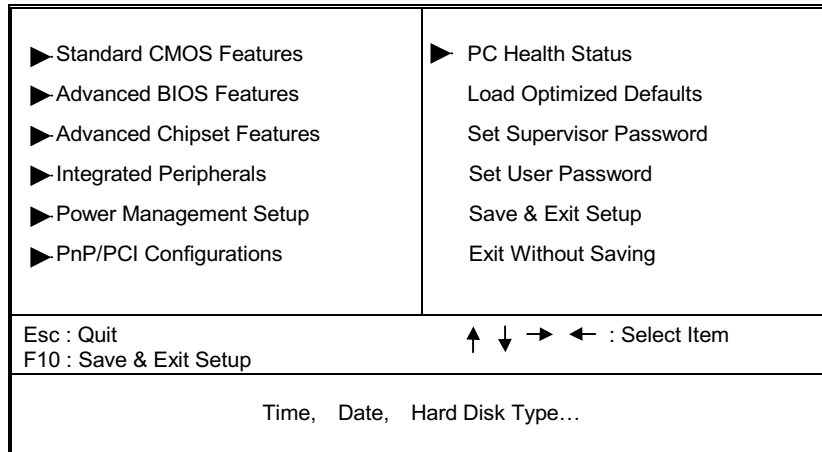
Keystroke	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left (menu bar)
Right arrow	Move to the item on the right (menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ Key	Increase the numeric value or make changes
- Key	Decrease the numeric value or make changes
Esc key	Main Menu – Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu – Exit Current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the fail-safe defaults from BIOS default table
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

## 2.1 Main Menu

Once you enter Award BIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

### ■ Figure 1. Main Menu

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software



#### Standard CMOS Features

This setup page includes all the items in a standard compatible BIOS.

#### Advanced BIOS Features

This setup page includes all the items of BIOS special enhanced features.

#### Advanced Chipset Features

This setup page includes all the items of chipset special features.

#### Integrated Peripherals

This section page includes all the items of IDE hard drive and Programmed Input/Output features.

**Power Management Setup**

This setup page includes all the items of power management features.

**PnP/PCI Configurations**

This setup page includes IRQ Setting by user define or default.

**PC Health Status**

This setup page includes IRQ Setting by user define or default.

**Load Optimized Defaults**

These settings are more likely to configure a workable computer when something is wrong. If you cannot boot the computer successfully, select the BIOS Setup options and try to diagnose the problem after the computer boots. These settings do not provide optimal performance.

**Set Supervisor Password**

Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

**Set User Password**

You can specify both a User and a Supervisor password. When you select either password option, you are prompted for a 1-6-character password. Enter the password and then retype the password when prompted.

**Save & Exit Setup**

Save CMOS value changes to CMOS and exit setup.

**Exit Without Saving**

Abandon all CMOS value changes and exit setup.

## 2.2 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

### ■ Figure 2. Standard CMOS Setup

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software  
Standard CMOS Features

Date (mm:dd:yy)	Mon, Jul 5 1999	Item Help
Time (hh:mm:ss)	17 : 38 : 5	
▶ IDE Primary Master	Press Enter None	Menu Level ▶
▶ IDE Primary Slave	Press Enter None	Change the day, month
▶ IDE Secondary Master	Press Enter None	year and century.
▶ IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5 in	
Drive B	None	
Video	EGA/VGA	
Halt On	All but Keyboard	
Base Memory	XXXX	
Extended Memory	XXXX	
Total Memory	XXXX	

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

**Main Menu Selections**

This table shows the selections that you can make on the Main Menu.

<b>Item</b>	<b>Options</b>	<b>Description</b>
Date	Month DD YYYY	Set the system date. Note that the 'Day' automatically changes when you set the date.
IDE Primary Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
IDE Secondary Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
IDE Secondary Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
Drive A Drive B	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.

---

<b>Item</b>	<b>Options</b>	<b>Description</b>
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you.
Base Memory	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the sytem.

## 2.3 Advanced BIOS Features

### ■ Figure 3. Advanced BIOS Setup

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software  
Advanced BIOS Features

Virus Warning	<b>Disabled</b>	Item Help
External Cache	Enabled	
First Boot Device	Floppy	Menu Level ►
Second Boot Device	HDD-0	
Third Boot Device	LS/ZIP	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Disabled	
Boot Up NumLock Status	Off	
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**

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempts to write data into this area, BIOS will show a warning message on screen and alarm beep.

<b>Disabled</b> (default)	No warning message appears when anything attempts to access the boot sector or hard disk partition table.
<b>Enabled</b>	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

**External Cache**

These fields allow you to Enable or Disable the CPU's "Level 2" secondary cache. Caching allows better performance.

<b>Enabled</b> (default)	Enable cache.
<b>Disabled</b>	Disable cache.

**First /Second/Third/ Boot Other Device**

These BIOS attempts to load the operating system from the devices in the sequence selected in these items.

**The Choices:** Floppy, LS/ZIP, HDD SCSI, CDROM, Enabled.

**Swap Floppy Drive**

If the system has two floppy drives, you can swap the logical drive name assignments.

**The Choices:** Enabled, Disabled (default).

**Boot Up Floppy Seek**

Seeks disk drives during boot up. Disabling speeds boot-up.

**The Choices:** Enabled, Disabled (default).

**Boot Up NumLock Status**

Select power on state for NumLock.

<b>On</b>	Numpad is number keys.
<b>Off</b> (default)	Numpad is arrow keys.



**Security Option**

This category allows you to limit access to the system and Setup, or just to Setup.

<b>System</b>	The system will not boot and access to Setup will be denied if the correct password is not entered in prompt.
<b>Setup (default)</b>	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

**OS Select For DRAM > 64MB**

Select the operating system that is running with greater than 64MB of RAM on the system.

**The Choices:** Non-OS2 (default), OS2.

**Video BIOS Shadow**

Determines whether video BIOS will be copied to RAM for faster execution.

<b>Enabled (default)</b>	Optional ROM is enabled.
<b>Disabled</b>	Optional ROM is disabled.

**C8000 – CFFFF Shadow / D0000 - DFFFF Shadow**

Determines whether the optional ROM will be copied to RAM for faster execution.

<b>Enabled</b>	Optional ROM is shadowed.
<b>Disabled (default)</b>	Optional ROM is not shadowed.

**Note:** For C8000 - DFFFF option - ROM on PCI BIOS, BIOS will automatically enable the shadow RAM. User does not have to select the item.

## 2.4 Advanced Chipset Features

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

### ■ Figure 4. Advanced Chipset Setup

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software  
Advanced Chipset Features

System BIOS Cacheable	<b>Enabled</b>	Item Help
Memory Hole At 15M-16M	Disabled	
AGP Aperture Size (MB)	128	Menu Level ▶
K7 CLK_CTL Select	Optimal	
SDRAM ECC Setting	Disabled	

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

### System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

**The Choices:** Enabled (default), Disabled.

**Memory Hole At 15M-16M**

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

**The Choices:** Enabled, Disabled (default)

**AGP Aperture Size (MB)**

This option determines the effective size of the graphics aperture used in the particular PAC configuration. The AGP aperture is memory mapped, while graphics data structure can reside in a graphics aperture. The aperture range should be programmed as not cacheable in the processor cache, accesses with the aperture range are forwarded via a translation table that is maintained on the main memory. The option allows the selection of an aperture of 4MB,8MB,16MB,32MB,64MB,128MB,or 256MB.

**K7 CLK\_CTL Select**

Set K7 clock ramp rate according to system clock Multiplier and the System bus speed.

**The Choices:** Default, Optimal (default).

**SDRAM ECC Setting**

When SDRAM ECC Setting Enabled, the system allows a detection of single-bit and multiple-bit errors and recovery of single-bit errors.

**The Choices:** Enabled, Disabled (default).

## 2.5 Integrated Peripherals

### ■ Figure 5. Integrated Peripherals

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software  
Integrated Peripherals

IDE Primary Master PIO	<b>Auto</b>	▲ ▼	Item Help
IDE Primary Slave PIO	Auto		Menu Level ▶
IDE Secondary Master PIO	Auto		
IDE Secondary Slave PIO	Auto		
IDE Primary Master UDMA	Auto		
IDE Primary Slave UDMA	Auto		
IDE Secondary Master UDMA	Auto		
IDE Secondary Slave UDMA	Auto		
On-Chip Primary PCI IDE	Enabled		
On-Chip Secondary PCI IDE	Enabled		
USB Host Controller	Enabled		
USB Keyboard Support	Disabled		
Init Display First	PCI Slot		
Onboard FDC Controller	Enabled		
Onboard Serial Port 1	3F8/IRQ4		
Onboard Serial Port 2	2F8/IRQ3		
Onboard IR Controller	Disabled		
UART Mode Select	Normal		
UART2 Duplex Mode	Half		
RxD, TxD Active	Lo, Lo		
X IR Transmittion delay	Enabled		
Onboard Parallel Port	378/IRQ7		
Parallel Port Mode	SPP		
X ECP Mode Use DMA	3		
X EPP Mode Select	EPP 1.7		

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

**IDE Primary / Secondary Master / Slave PIO**

The IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

**The Choices:** Auto (default), Mode0, Mode1, Mode2, Mode3, Mode4.

**IDE Primary / Secondary Master / Slave UDMA**

Ultra DMA /33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA drive (Windows 95 OSR2 or a third party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, select Auto to enable BIOS support.

**The Choices:** Auto (default), Disabled.

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

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

**The Choices:** Enabled (default), Disabled

**USB Host Controller**

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

**The Choices:** Enabled (default), Disabled.

**USB Keyboard Support**

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

**The Choices:** Enable, Disabled (default).

**Init Display First**

This item allows you decide to active whether PCI Slot or AGP Slot.

**The Choices:** PCI Slot (default), AGP.

**Onboard FDC Controller**

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and if you wish to use it. If install and FDC or the system has no floppy drive, select Disabled in this field.

**The Choices:** Enabled (default), Disabled.

**Onboard Serial Port 1/Port 2**

Select an address and corresponding interrupt for the first and second serial ports.

**The Choices:** Disabled, Auto, (3F8/IRQ4), (2F8/IRQ3), (3E8/ IRQ4), (2E8 / IRQ3).

**Onboard IR Controller****Enabled/Disabled**

The system has an on-board Super I/O chip with an IR controller. Choose “Enabled” to use the on-board IR controller for accessing the IR devices. Otherwise choose “Disabled” to use the off-board IR controller.

**UART Mode Select**

This item allows you to determine which Infra Red (IR) function of onboard I/O chip.

**The Choices:** IrDA, ASKIR, Normal (default).

**UART2 Duplex Mode**

Select the value required by the IR device connected to the IR port. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time.

**The Choices:** Full, Half (default).

**RxD, TxD Active**

This item allows you to determine the active of RxD, TxD.

**The Choices:** “Hi, HI”, Hi, Lo”, “Lo, Hi”, “Lo, Lo” (default).

**IR Transmittiion delay**

This item allows you to decide to active IR transmission delay.

**The Choices:** Enabled (default), Disabled.

**Onboard Parallel Port**

This item allows you to determine access onboard parallel port controller with which I/O address.

**Parallel Port Mode**

Select an operating mode for the onboard parallel (printer) port. Normal EPP (Extended Parallel Port) ECP (Extended Capabilities Port) ECP+EPP PC AT parallel port Bidirectional Port Fast, buffered port Fast, buffered, Bidirectional Port. Select Normal unless you are certain your hardware and software both support EPP or ECP mode.

**ECP Mode Use DMA**

Select a DMA channel for the parallel port for use during ECP mode.

**The Choices:** 3 (default), 1.

**EPP Mode Select**

This item allows you to determine the IR transfer mode of onboard I/O chip.

**The Choices:** EPP1.9, EPP1.7 (default).

## 2.6 Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use.

### ■ Figure 6. Power Management Setup

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software  
Power Management Setup

APCI function	Enabled		Item Help
Power Management	User Define		
Video Off Method	V/H SYNC+Blank		Menu Level ▶
Suspend Type	PwrOn Suspend		
Standby Mode	Disabled		
HDD Power Down	Disabled		
HDD Down In Suspend	Disabled		
Soft-Off by PBTN	Instant-Off		
RI Resume/WOL	Disabled		
MODEM Use IRQ	3		
RTC Resume	Disabled		
X Date (of Month) Alarm	0		
X Time (hh:mm:ss) Alarm	0 0 0		
Primary IDE 0	Enabled		
Primary IDE 1	Enabled		
Secondary IDE 0	Enabled		
Secondary IDE 1	Enabled		
Parallel Port	Disabled		
Serial Port	Disabled		
IRQ3 (COM 2)	Disabled		
IRQ4 (COM 1)	Disabled		
IRQ5 (LPT 2)	Disabled		
IRQ6 (Floppy Disk)	Disabled		
IRQ7 (LPT 1)	Disabled		
IRQ8 (RTC Alarm)	Disabled		
IRQ9 (IRQ2 Redir)	Disabled		
IRQ10 (Reserved)	Disabled		
IRQ11 (Reserved)	Disabled		
IRQ12 (RS/2 Mouse)	Disabled		
IRQ13 (Coprocesor)	Disabled		
IRQ14 (Hard Disk)	Disabled		
IRQ15 (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



**ACPI function**

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).

**The Choices:** Enabled (default), Disabled.

**Power Management**

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down.
2. Doze Mode.
3. Suspend Mode.

There are four selections for Power Management, three of which have fixed mode settings

<b>Min. Power Saving</b>	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
<b>Max. Power Saving</b>	Maximum power management—ONLY AVAILABLE FOR SL CPU's. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
<b>User Defined (default)</b>	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

**Video Off Method**

This determines the manner in which the monitor is blanked.

<b>V/H SYNC+Blank (default)</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>	Initial display power management signaling.

**Suspend Type**

Select the Suspend Type.

**The Choices:** PwrOn Suspend (default), Stop Grant.

**Standby Mode**

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

**Disabled** (default)

**Enabled**

**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.

**Disabled** (default)

**Enabled**

**HDD Down In Suspend**

This item allows you to decide to Power down in suspend.

**The Choices:** Disabled (default), Enabled.

**Soft-Off by PWR-BTTN**

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung."

**The Choices:** Delay 4 Sec, Instant-Off (default)

**RI Resume/WOL**

To use this function, you need a LAN add-on card which supports power on functions. It also support the wake-up LAN jumper.

**The Choices:** Enabled, Disabled (default).

**MODEM Use IRQ**

This determines the IRQ, which can be applied in MODEM use.

**3** is (default)

**4 / 5 / 7 / 9 / 10 / 11 / NA**

**RTC Resume**

When Enabled, you can set the date and time at which the RTC (real-time clock) alarm awakes a system which has been powered down.

**The Choices:** Enabled, Disabled (default).

**Date (of Month) /Time (hh:mm:ss)**

You could set the date (of month) and timer (hh:mm:ss), any event occurring at will awakes a system which has been powered down.

**Primary IDE 0/1**

The default value is Enabled.

**Disabled**  
**Enabled** (default)

Disable this function.  
Enable monitor Primary IDE 0/1 for Green event.

**Secondary IDE 0/1**

The default value is Enabled.

**Disabled**  
**Enabled** (default)

Disable this function.  
Enable monitor Secondary IDE 0/1 for Green event.

**Parallel Port**

The default value is Disabled.

**Disabled** (default)  
**Enabled**

Disable this function.  
Enable monitor Parallel Port for Green event.

**Serial Port**

The default value is Disabled.

**Disabled** (default)  
**Enabled**

Disable this function.  
Enable monitor Serial Port for Green event.

**IRQ3 – IRQ15**

The following is a list of IRQ, Interrupt ReQuests, which can be exempted much as the COM ports and LPT ports above. 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 Disable, activity will neither prevent the system from going into a power management mode nor awaken it.

1. **IRQ3** (COM 2)
2. **IRQ4** (COM 1)
3. **IRQ5** (LPT 2)
4. **IRQ6** (Floppy Disk)
5. **IRQ7** (LPT 1)
6. **IRQ8** (RTC Alarm)
7. **IRQ9** (IRQ2 Redir)
8. **IRQ10** (Reserved)
9. **IRQ11** (Reserved)
10. **IRQ12** (PS/2 Mouse)
11. **IRQ13** (Coprocessor)
12. **IRQ14** (Hard Disk)
13. **IRQ15** (Reserved)

## 2.7 PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

### ■ Figure 7. PnP/PCI Configurations

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software  
Pnp/PCI Configurations

PNP OS Installed	<b>No</b>	Item Help
Reset Configuration Data	Disabled	
Resources Controlled By	Auto (ESCD)	Menu Level ▶
X IRQ Resources	Press Enter	Select Yes if you are using a Plug and Play capable operating system. Select No if you need the BIOS to configure non-boot devices
X DMA Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	

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

### **PNP OS Installed**

When set to YES, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Window™ 95. When set to NO, BIOS will initialize all the PnP cards. Therefore for non-PnP operating system (DOS, Netware™), this option must set to NO.

### **Reset Configuration Data**

The system BIOS supports the PnP feature so the system needs to record which resource is assigned and proceeds resources from conflict. Every peripheral device has a node, which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved at the system BIOS. If Disabled (default) is chosen, the system's ESCD will update only when the new configuration varies from the last one. If Enabled is chosen, the system is forced to update ESCDs and then is automatically set to the "Disabled" mode.

IRQ-3	assigned to : PCI / ISA PnP
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
DMA-0	assigned to : PCI / ISA PnP
DMA-1	assigned to : PCI / ISA PnP
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

The above settings will be shown on the screen only if "Manual" is chosen for the resources controlled by function.

Legacy is the term, which signifies that a resource is assigned to the ISA Bus and provides for non-PnP ISA add-on cards. PCI / ISA PnP signifies that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.

### **Resources Controlled By**

By Choosing "Auto" (default), the system BIOS will detect the system resources and automatically assign the relative IRQ and DMA channel for each peripheral.

By Choosing "Manual", the user will need to assign IRQ & DMA for add-on cards. Be sure that there are no IRQ/DMA and I/O port conflicts.

**IRQ Resources**

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

**DMA Resources**

When resources are controlled manually, assign each system DMA channel a type, depending on the type of device using the DMA channel.

**PCI/VGA Palette Snoop**

Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide boot information and VGA compatibility.

However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the Write access to the VGA palette and registers the snoop data. In PCI based systems, where the VGA controller is on the PCI bus and a non-VGA graphic controller is on an ISA bus, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Write.

In this case, the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

<b>Disabled</b> (default)	Disables the function.
<b>Enabled</b>	Enables the function.

## 2.8 PC Health Status

### ■ Figure 8. PC Health Status

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software  
PC Health Status

Current System Temp.	x °C / x °F	Item Help
Current CPU1 Temperature	x °C / x °F	
Current CPUFAN1 Speed	x RPM	Menu Level ▶
Current CPUFAN2 Speed	x RPM	
IN0 (V)	x V	
IN1 (V)	x V	
+ 5 V	x V	
+12 V	x V	
-12 V	- x V	
- 5 V	- x V	
VBAT (V)	x V	
Show H/W Monitor in Post	3 sec	

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

#### **Current System Temp.**

This field displays the *current* system temperature, if your computer contains a monitoring system.

#### **Current CPU1 Temperature**

This field displays the *current* CPU temperature, if your computer contains a monitoring system.

#### **Current CPUFAN1/2 Speed**

These fields display the current speed of up to three CPU fans, if your computer contains a monitoring system.



**IN0 / IN1**

These fields display the current voltage of up to seven voltage input lines, if your computer contains a monitoring system.

**Current CPU Vcore ±5V, ±12V, VBAT**

Detect system's voltage status automatically.

**Show H/W Monitor in Post**

If your computer contains a monitoring system, it will show PC health status during POST stage. The item offers several delay times to select you want.

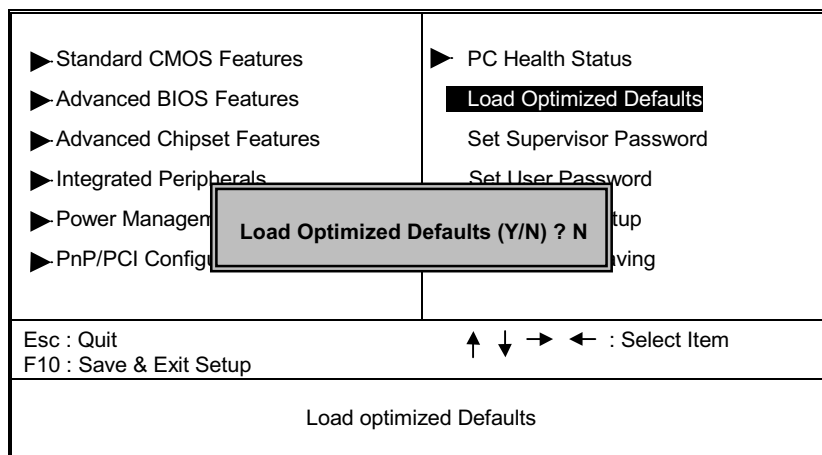
**3 set** (default)

## 2.9 Load Optimized Defaults

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

### ■ Figure 9. Load Optimized Defaults

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software

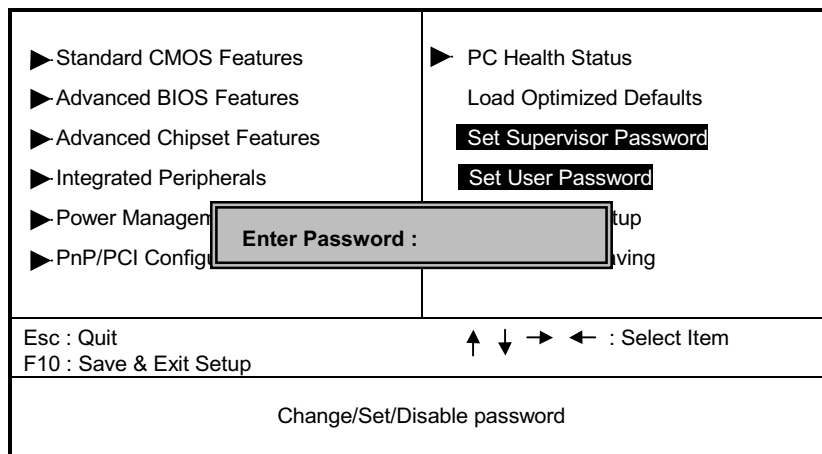


Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.

## 2.10 Set Supervisor/User Password

### ■ Figure 10. Set Supervisor/User Password

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software



When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

#### ENTER PASSWORD

Type the password, up to eight characters, and press <Enter>. The password you type now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <ESC> to abort the selection and not enter a password. To disable password, just press <Enter> when you are prompted to enter password. A message will confirm that you wish to disable the password. Once the password is disabled, the system will boot and you can enter setup freely.

**PASSWORD DISABLED**

If you select “System” at the Security Option of BIOS Features Setup Menu, you will be prompted for the password every time when the system is rebooted, or any time when you try to enter Setup. If you select “Setup” at Security Option of BIOS Feature Setup Menu, you will be prompted only when you try to enter Setup.

## 2.11 Save & Exit Setup

### ■ Figure 11. Save & Exit Setup

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software

▶ Standard CMOS Features	▶ PC Health Status
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated Peripherals	Set User Password
▶ Power Management	Exit Without Saving
▶ PnP/PCI Configurations	

**SAVE to CMOS and EXIT (Y/N)? Y**

Esc : Quit  
F10 : Save & Exit Setup

↑ ↓ → ← : Select Item

Save Data to CMOS

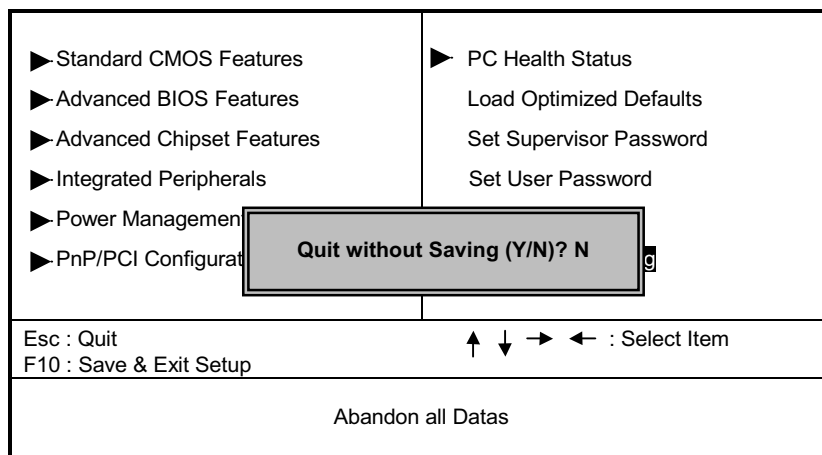
Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS RAM.

Type "N" will return to Setup Utility.

## 2.12 Exit Without Saving

### ■ Figure 12. Exit Without Saving

CMOS Setup Utility-Copyright (C ) 1984-1999 Award Software



Type "Y" will quit the Setup Utility without saving to RTC CMOS RAM.  
Type "N" will return to Setup Utility.

## 3 Software

### 3.1 Software List

Category	Description	Platform	Location in CD
AMD AGP Miniport Driver	Install the drivers to enable the AGP function for supporting the AGP VGA Card	Windows 98	\Agp
AMD Bus Master IDE Drivers	Install the drivers to support Ultra DMA mode Hard Drive.	Windows 95/98/NT4.0	\Eide
HighPoint XStore Pro	Install the drivers to support Ultra DMA mode Hard Drive.	Windows 95/98	\XStore
Award Flash Utility	Used for updating BIOS.		\Flash

## 3.2 Software Installation

We provide an installation wizard, Driver CD Installation Utility (START.EXE), located in the root of Driver CD to let users install some common used drivers conveniently.



You can simply put Driver CD into CD-ROM drive and the Installation Utility will automatically run or you can run the Driver CD Installation Utility directly by using mouse cursor to click the proper option on the page. Utility will invoke other applications to complete the rest of installation.



## 4. NOTES

### 4.1 Recommended AMD Athlon Heatsinks

Vendor	Part Number	Solution Type	Max Frequenc Supported	Heatsink Support Capable?
<u>Tai-Sol</u>	CGK720022	Fan/Heatsink	500 MHz	yes
<u>Tai-Sol</u>	CGK720032	Fan/Heatsink	600 MHz	yes
<u>Tai-Sol</u>	CGK720042	Fan/Heatsink	550 MHz	yes
<u>Tai-Sol</u>	CGK720052	Fan/Heatsink	550 MHz	yes
<u>Alpha</u>	P 612 H35M	Fan/Heatsink	650 MHz	yes
<u>Chip Coolers</u>	HTS421B-SB	Fan/Heatsink	600 MHz	yes
<u>Chip Coolers</u>	HTS421B-SC	Fan/Heatsink	550 MHz	yes
<u>Cooler Master</u>	DP2-5G51	Dual Fan/Heatsink	600 MHz	no
<u>Global WIN</u>	VEK-12	Dual Fan/Heatsink	550 MHz	no

\* Does not ship with interface material

## 4.2 Recommended Chassis Power Supply

Vendor	Part Number	Output Wattage	Combined +3V & +5V Power	Form Factor	Max Supported Frequency
<u>American Media Systems</u>	CWT-300ATX	300 W	160 W	ATX	800 MHz
<u>Astec</u>	SA302-3515	300 W	170 W	ATX	800 MHz
<u>Delta Electronics Inc.</u>	DPS-200PB-103A	250 W	145 W		700 MHz
<u>Delta Electronics Inc.</u>	DPS-338AB C rev:00	330 W	220 W		800 MHz
<u>Emacs</u>	AP2-5300F-RV2	300 W	175 W	ATX	800 MHz
<u>Enhance Electronics</u>	ATX-1125B	250 W	145 W <sup>2</sup>	ATX	700 MHz
<u>Enlight Corp.</u>	HPC-250G2 rev: A1-01	250 W	150 W	ATX	800 MHz
<u>FSP Group Inc.</u>	FSP 250-61GN <sup>1</sup>	250 W	150 W	NLX	800 MHz
<u>Powerman</u>	FSP 300-60GT	300 W	145 W	ATX	700 MHz
<u>Sparkle Power (SPI)</u>	FSP 250-61GN <sup>1</sup>	250 W	145 W	NLX	700 MHz
<u>Sparkle Power (SPI)</u>	FSP 300-60GT	300 W	150 W	ATX	800 MHz
<u>PC Power and Cooling</u>	Turbo-Cool 300 ATX	300 W	150 W	ATX	800 MHz

Note1: Power Supply availability: Middle of August due to regulatory testing (UL, CE, etc.)

Note2: Need to specify 145W combined power when ordering due to product upgrade of model ATX-1125B from 130W to 145W combined power.

### 4.3 Recommended SDRAM List

The following devices have been placed in random configurations in a M7MKA motherboard and have been found to pass the following tests.

Please see the important notice at the end of this document.

Depth (MB)	IC Mfg	IC Part Number	Module Mfg	Module Part Number
16	Hyundai	HY57V168010C	ATP	AMC2V64B8S2G8Y
16	Nanya	NT56V1680A0T-8A	ATP	AMC2V64B8S4G8NA
16	NEC	D4516821AG5	PNY	64203ESEM4G09Y
16	NEC	D4516821AG5	ATP	AMC2V64B8S2G8N
16	Samsung	KM48S2020CT-G8	ATP	AMC2V64B8S2G8S
16	Siemens	HYB39S16800CT-8	ATP	AMC2V64B8S2G8SI
16	TI	TMS626812BDGE	Simple	STI722108UD1-10DVG
16	Vanguard	VG3617801CT	ATP	AMC2V64B8S2G8V
32	Fujitsu	MB81F641642C-103FN	ATP	AMC4V64M6S4G8
32	Fujitsu	MB81F6822-102FN	Centon	Unknown
32	Goldstar	GM72V16821DT7K	Viking	VIK472232
32	Hyundai	HY57V168010D	ATP	AMC4V64B8S2G8Y
32	Micron	MT48LC2M8A1	Centon	CINT32M/P100S1
32	Micron	MT48LC2M8A1-8B	PNY	64403FSEM4G17Y
32	Micron	MT46LC8M8A1	Centon	CINT32M/P100T1
32	Mitsubishi	M5M4V64S40ATP-8LT	Mitsubishi	MH4S64BLG-8
32	Nanya	NT56V1680A0T-8A	ATP	AMC4V64B8S2G8NA
32	NEC	D4516821AG5	ATP	AMC4V64B8S2G8N
32	NEC	D4564163G5-A10-9JF	ATP	AMC4V64M6S4G8

Depth (MB)	IC Mfg	IC Part Number	Module Mfg	Module Part Number
32	Samsung	KM416S4030BT-GL	ATP	AMC4V64M6S4G8
32	Samsung	KM416S4030CT-GL	Samsung	KMM366S424CTS-GL
32	Samsung	KM48S2020CT-G8	ATP	AMC4V64B8S2G8S
32	Samsung	KM48S2020CT-GH	Centon	CINT32M/P100S1
32	Samsung	KM48S2020CT-GL	Centon	CINT32M/P100T1
32	Siemens	HYB39S16800CT-8	ATP	AMC4V64B8S2G8SI
32	Siemens	HYB39S16800CT-8	Simple	SIM7241128
32	Siemens	HYB39S64160BT-8	Siemens	HYS64V4200GU-8
32	Vanguard	VG3617801CT	ATP	AMC4V64B8S2G8V
64	Fujitsu	MB81F64842C-102FN	ATP	AMC8V64E8S4G8F
64	Fujitsu	MB81F64842C-102FN	ATP	AMC8V64E8S4G8
64	Hitachi	HM5264805TTB60	ATP	AMC8V64E8S4G8
64	Hyundai	HY57V658020ATC-10P	ATP	AMC8V64E8S4G8
64	Hyundai	HY57V658020ATC-10S	ATP	AMC8V64E8S4G8
64	LG	GM72V66841CT-7J	ATP	AMC8V64E8S4G8
64	LG	GM72V66841ET-75	LG	GMM2649233ETG-75
64	LG	GM72V66841ET-7J	LG	GMM2649233ETG-7JC
64	Micron	48LC8M8A2	Centon	CINT64M/P100S1
64	Micron	MT48LC8M8A2-75B	Micron	MT8LSDT864AG-133B4
64	Mitsubishi	M2V64S30BTP	Mitsubishi	MH8S64BALD-8
64	Mosel	V54C365804VBT8PC	ATP	AMC8V64E8S4G8MO
64	NEC	D4564841G5	ATP	AMC8V64E8S4F8N
64	Samsung	KM48S8030BT-GH	ATP	AMC8V64E8S4GHS
64	Samsung	KM48S8030CT-GL	ATP	AMC8V64E8S4GLS
64	Samsung	KM48S8030CT-GL	Smart	SM564088574N6BP
64	Samsung	KM48S8030CT-GL	Samsung	KMM366S823CTS-GLQ(C)
64	Siemens	HYB39S64800BT-8	Siemens	HYS64V8200GU-8

<b>Depth (MB)</b>	<b>IC Mfg</b>	<b>IC Part Number</b>	<b>Module Mfg</b>	<b>Module Part Number</b>
64	Toshiba	TC59S6408BFT-80	ATP	AMC8V64E8S4G8T
128	Fujitsu	MB81F64842C-102FN	ATP	AMC16V64E8S4G8F
128	Hyundai	HY57V658020ATC-10S	ATP	AMC16V64E8S4G8T
128	Micron	MT48LC8M8A2-75B	Micron	MT16LSDT1664AG-133B4
128	Mitsubishi	M2V64S30BTP	Mitsubishi	MH16S64BAMD-8
128	Mosel	V84C365804VBT8PC	ATP	AMC16V64E8S4G8MO
128	NEC	D4564841G5	ATP	AMC16V64E8S4G8N
128	NEC	D4564841G5	PNY	64174ESEM4G17T
128	NEC	D4564841G5-A80-9JF	ATP	AMC16V64E8S4G8T
128	Samsung	KM48S16030T-GL	ATP	AMC16V72E8SEGLS
128	Samsung	KM48S16030T-GL	ATP	AMC16V64E8SEGLS
128	Samsung	KM48S8030BT-GH	ATP	AMC16V64E8S4GHS
128	Samsung	KM48S8030CT-GL	ATP	AMC16V64E8S4GLS
128	Samsung	KM48S8030CT-GL	Samsung	KMM366S1623CT-GL
128	Siemens	HYB39S564800AT-8	Smart	SM564168574N6BP
128	Siemens	HYB39S64800BT-8	Siemens	HYS64V16220GU-8
128	Toshiba	TC59S6408BFT-80	ATP	AMC16V64E8S4G8T
256	Hitachi	HM5212805DTDB60	ATP	AMC32V64E8S4G8H
256	Samsung	KM48S16030T-GL	ATP	AMC32V64E8S4GLS
256	Samsung	KM48S16030T-GL	ATP	AMC32V72E8S4GLS
256	Toshiba	TC59SM708FT-80	ATP	AMC32V64E8S4G8T

## 4.4. Recommended Video and Drivers

- 3DFX Voodoo3 (2000/3000/3500) — get latest driver from [www.3dfx.com](http://www.3dfx.com) . Best version is 1.00.02 to be released next week. For now, get driver from the QuakeIII compatible driver section (Rev2).
- Nvidia TNT/TNT2/TNT2 Ultra get latest driver from [www.nvidia.com](http://www.nvidia.com) .Version 1.88 or later.
- Matrox G400 get latest driver from [www.matrox.com](http://www.matrox.com) . Version 5.11.012 or later.
- ATI Rage 128 VR/GL contact normal ATI OEM/Developer support for latest driver. Version 6.12cd08 or later.
- S3 savage4 contact S3 OEM/Developer support for latest driver.

## 5. Trouble Shooting

### **PROBLEM**

No power to the system at all. Power light does not illuminate, fan inside power supply does not turn on. Indicator light on keyboard does not turn on.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Power cable is unplugged.	Visually inspect power cable.	Make sure power cable is securely plugged in.
Defective power cable.	Visual inspection, try another cable.	Replace cable.
Power supply failure.	Power cable and wall socket are OK, but system is still dead.	Contact technical support.
Faulty wall outlet; circuit breaker or fuse blown.	Plug in device known to work in socket and test	Use different socket, repair outlet, reset circuit breaker or replace fuse.

**PROBLEM**

System inoperative. Keyboard lights are on, power indicator lights are lit, hard drive is spinning.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Expansion card is partially dislodged from expansion slot on the motherboard.	Turn off computer. Take cover off system unit. Check all expansion cards to ensure they are securely seated in slots.	Using even pressure on both ends of the expansion card, press down firmly on expansion card.
Defective floppy disk drive or tape drive.	Turn system off. Disconnect the cables from one of the floppy drives. Turn on the floppy drives. Turn on the system, check to see if the keyboard operates normally. Repeat until you have located defective unit.	Contact Technical Support.
Defective expansion card.	Turn computer off. Remove an expansion card.	Make sure expansion card is secure in expansion socket.



**PROBLEM**

System does not boot from hard disk drive, can be booted from floppy disk drive.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Connector between hard drive and system board unplugged.	When attempting to run the FDISK utility described in the HARD DISK section of this manual you get a message, INVALID DRIVE SPECIFICATION.	Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the Standard CMOS Setup.
Damaged Hard Disk or Disk Controller.	Format hard disk; if unable to do so the hard disk may be defective.	Contact Technical Support.
Hard Disk directory or FAT is scrambled.	Run the FDISK program, format the hard drive. Copy data that was backed up onto Hard Drive.	Backing up the hard drive is extremely important. All Hard Disks are capable of breaking down at any time.

**PROBLEM**

System only boots from floppy Disk. Hard disk can be read and applications can be used but booting from Hard Disk is impossible.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Hard Disk boot program has been destroyed.	A number of causes could be behind this.	Back up data and applications files. Reformat the Hard Drive as described in the Hard Drive section of this manual. Re-install applications and data using backup disks.

**PROBLEM**

Error message reading "SECTOR NOT FOUND" or other error messages not allowing certain data to be retrieved.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
A number of causes could be behind this.	Use a file by file backup instead of an image backup in order to backup the Hard Disk.	Back up any salvageable data. Then low level format, partition, and high level format the hard drive. Re-install all saved data when completed.

**PROBLEM**

Disk formatted on IBM PS/2 will not operate with this system.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
The IBM PS/2 uses a different format from other computers.	IBM PS/2 disk format will not work in an AT type computer.	Format disk in the AT type computer insert disk into the IBM PS/2 and copy the files you wish.

**PROBLEM**

After installing an expansion card (network card, tape drive card, etc.) the system no longer works properly.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
No power to monitor.	All or part of the system may be inoperable. The new card may work but a mouse or COM port may not work.	Change the interrupt or RAM address on the new expansion card. See the documentation that came with the new card in order to change pin settings. Many expansion devices come with proprietary software that will assist you in doing this.

**PROBLEM**

Screen message says "Invalid Configuration" or "CMOS Failure."

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Incorrect information entered into the configuration (setup) program.	Check the configuration program. Replace any incorrect information.	Review system's equipment . Make sure correct information is in setup.

**PROBLEM**

Screen is blank.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
No power to monitor.		Check the power connectors to monitor and to system. Make sure monitor is connected to display card, change I/O address on network card if applicable.
Monitor not connected to computer.		See instructions above.
Network card I/O address conflict.		See instructions above.

**PROBLEM**

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Memory problem, display card jumpers not set correctly.		Reboot computer. Reinstall memory, make sure that all memory modules are installed in correct sockets. Check jumper and switch settings on display card. See display card section for information on settings.
Computer virus.		Use anti-virus programs (McAfee, E-Prot, etc) to detect and clean viruses.

**PROBLEM**

Screen goes blank periodically.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Screen saver is enabled.		Disable screen saver.

**PROBLEM**

Keyboard failure.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Keyboard is disconnected.		Reconnect keyboard. Check keys again, if no improvement replace keyboard.

**PROBLEM**

No color on screen.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Faulty Monitor.		If possible, connect monitor to another system. If no color replace monitor.
CMOS incorrectly set up.		Call technical support.

**PROBLEM**

Floppy drive light stays on.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Floppy Drive cable not connected correctly.		Reconnect floppy cable making sure PIN1 on the Floppy Drive corresponds with PIN1 on Floppy cable connector.

### **PROBLEM**

Error reading drive A:

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Bad floppy disk.		Try new floppy disk
Floppy disk not formatted.		Format floppy disk (type FORMAT A:type ENTER).

### **PROBLEM**

C: drive failure.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
SETUP program does not have correct information.		Boot from drive A: using DOS system disk. Input correct information to SETUP program.
Hard Drive cable not connected properly.		Check Hard Drive cable.

### **PROBLEM**

Cannot boot system after installing second hard drive.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Master/Slave jumpers not set correctly.		Set Master/Slave jumpers correctly.
Hard Drives not compatible / different manufacturers.		Run SETUP program and select correct drive types. Call Drive manufacturers for compatibility with other drives.

### **PROBLEM**

Missing operating system on hard drive.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
CMOS setup has been changed.		Run setup and select correct drive type.

### **PROBLEM**

Certain keys do not function.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Keys jammed or defective.		Replace keyboard.

### **PROBLEM**

Keyboard is locked, and no keys function.

<b>PROBABLE CAUSE</b>	<b>DIAGNOSIS</b>	<b>SOLUTION</b>
Keyboard is locked.		Unlock keyboard.

11/08/1999  
MADE IN TAIWAN  
R.O.C