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.

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 a 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 numbérique n'émet pas de bruits radioélectriques dépassant les limites appliquées aux appareils numbériques de Class B préscrits dans le réglement du brouillage radioélectrique edict par le minister 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 motherboard, a Pentium II™ / Celeron™ microprocessor based PC/Micro ATX system, supports ISA Bus and AGP and PCI Local Bus to support upgrades to your system performance. It is ideal for multi-tasking and fully supports MS-DOS, Windows, Windows NT, Novell, OS/2, Windows9x, UNIX, SCO UNIX etc. This manual also explains how to install the motherboard 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

- The Pentium II™ / Pentium III™ / Celeron™ Processor provides the new generation power for high-end workstations and servers.
- Provides slot1.

Speed

- Supports CPU bus frequency 66MHz/100MHz.
- Supports from 233MHz to 550MHz CPU speeds.
- Supports 33MHz PCI Bus speed.
- I/O clock 8MHz for ISA Bus.
- Supports 66MHz / 133MHz AGP Bus.

DRAM Memory

- Supports 8/16/32/64/128....MB, 3.3V / Unbuffered DIMM module socket.
- Supports Synchronous DRAM.
- Supports a maximum memory size of 256MB with SDRAM.

Flash Memory

- Supports flash memory.
- Supports ESCD Function.

Shadow RAM

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

Green Function

- Supports power management operation via BIOS.
- Wakes up by any key pressed or mouse activity.

BUS Slots

– Provides one 16-bit ISA Bus slot and three PCI Bus slots, one AGP Bus slot.

PCI Enhanced IDE Built-in On Board

– Supports 4 IDE hard disk drives.
– Supports PIO mode 4, Master Mode, high performance hard disk drives.
– Supports Ultra DMA/33,Ultra DMA/66, Bus Master Mode.
– Supports IDE interface with CD-ROM.
– Supports high capacity hard disk drives.
– Supports LBA mode.
– Supports LS120/ZIP 100.

PCI Sound Built-in Onboard

– ESS™ Solo1™ Sound Chip.
– Full native DOS games compatibility.
– High-Quality ESFM music synthesizer.
– Software Wavetable synthesizer.
– Integrated Spatializer 3D audio effects processor.
– 16-Bit stereo ADC and DAC.
– Full-Duplex operation for simultaneous record and playback.
– Supports
  (1) PC games and applications for Sound Blaster™ and Sound Blaster Pro™.
  (2) Microsoft Windows Sound System, PC 97™/PC 98™ and WHQL™ specifications.

ISA I/O Built-in Onboard

– 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 with 16 byte FIFO.
– Supports one Infrared transmission (IR) port.
– Supports PS/2 Mouse , PS/2 Keyboard.
– Supports 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB floppy disk drives.

Hardware Monitor Subsystem (Optional)

The hardware monitor subsystem provides low-cost instrumentation capabilities. The features of the hardware monitor subsystem include:

- Microprocessor System Hardware Monitor:
  - Integrated temperature and voltage monitoring to detect levels above or below acceptable values(+12V, -12V, +5V, +3.3V). When suggested ratings for temperature, fan speed, or voltage are exceeded, an interrupt is activated.
  - One fan speed sensor.
- Remote reset capabilities from a remote peer or server.

Universal Serial Bus

- USB V.1.0 and Intel™ Universal HCI V.1.1 compatible.
- Supports two Universal Serial Bus (U.S.B.) Ports.
- Supports 48 MHz USB.

Dimension

- 24.3 cm X 20.5 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 9x, Novell, UNIX, SCO UNIX etc.

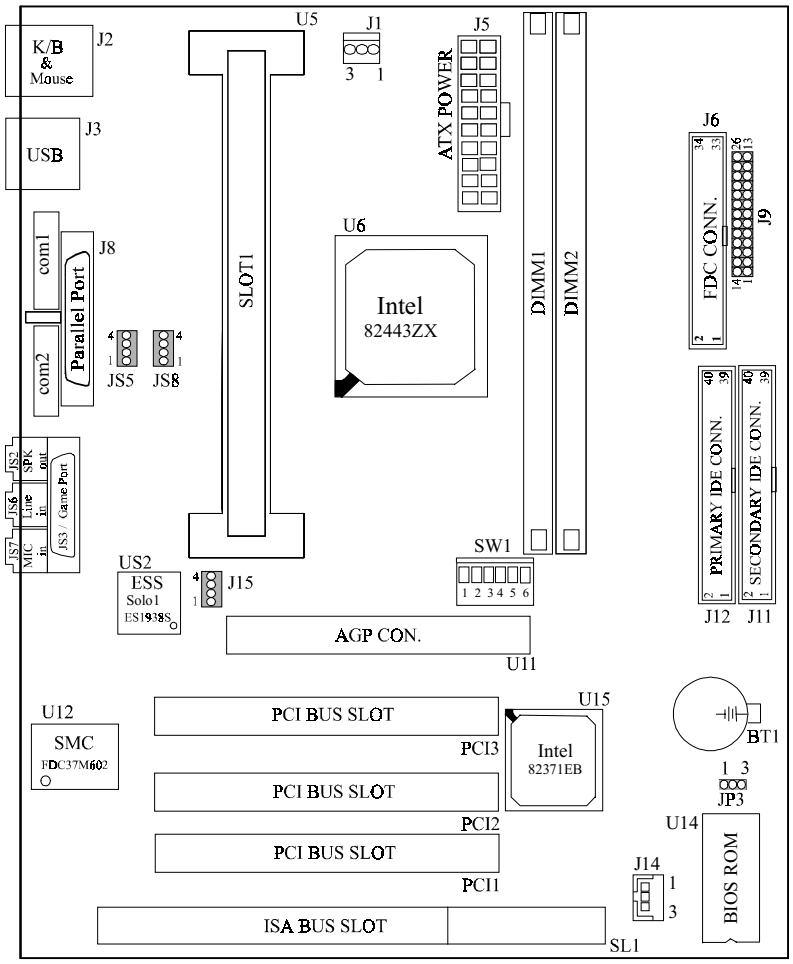
1.1.3 Attachments

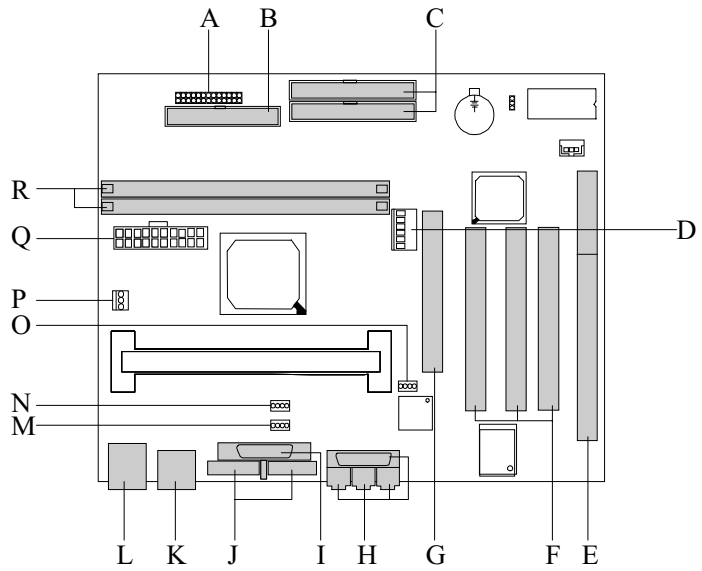
- HDD Cable
- FDD Cable
- Retention Kits for CPU
- CD for Driver and BIOS flash utility
- Rear I/O Panel for Micro ATX Case (Optional)

1.2 Motherboard Installation

1.2.1 Layout of Motherboard

Model No.M6TZF

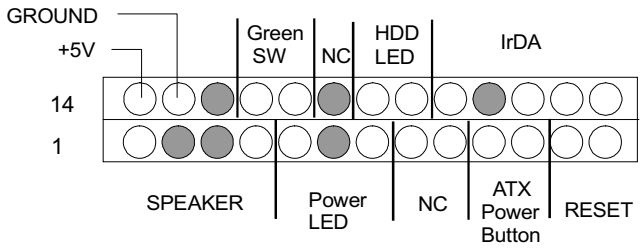




1.3 Motherboard Connectors

A. Front Panel Connectors (J9)
B. Floppy Disk Connector (J6)
C. IDE Connectors (J11/J12)
D. CPU Clock Selection (SW1)
E. ISA Slot (SL1)
F. PCI Slots (PCI 1-3)
G. AGP Connector (U11)
H. Game Port/MIDI Port
I. Paralle Port Connector (J8)
J. COM Ports (COM1/COM2)
K. USB Connectors (J3)
L. Mouse/Keyboard Connector (J2)
M. CD Audio Input Connector (JS5)
N. CD Audio Input Connector (JS8)
O. TAD-I/O Connector (J15)
P. CPU Fan Connector (J1)
Q. ATX Power Connector (J5)
R. DIMMs (DIMM 1-2)

1.3.1 Front Panel Connectors (J9)



Pin No.	Assignment	Function	Pin No.	Assignment	Function
1	Speaker	Speaker Connector	14	+5V	VCC
2	NC		15	Ground	Ground
3	NC		16	Ground	
4	+5V		17	Green Control	Green Switch
5	Power LED(+)	Power LED	18	Ground	
6	NC		19	NC	
7	Ground		20	HDD LED(-)	HDD LED
8	NC	No Function	21	HDD LED(+)	
9	NC		22	+5V	IrDA Connector
10	Power Switch	ATX Power Connector	23	NC	
11	Standby Voltage		24	IRRX	
12	Reset Control	Reset	25	Ground	
13	Ground		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 (J6)

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 (J11/J12)

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.

- **J12 (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.

- **J11 (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

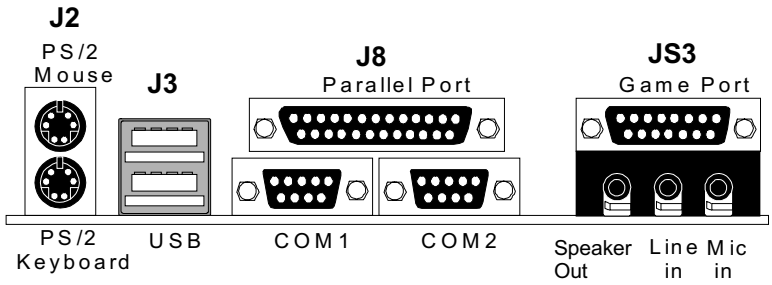
to slave mode.

1.3.4 ATX 20-pin Power Connector (J5)

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.

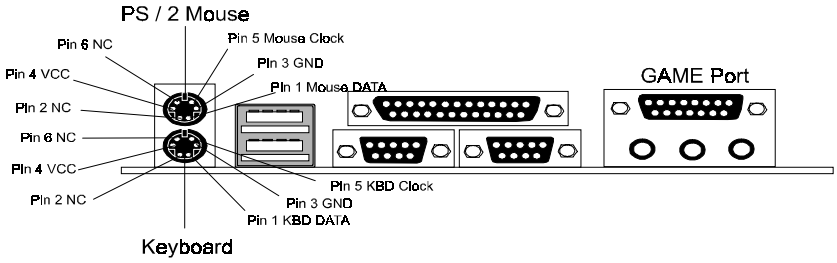
PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

1.4 Back Panel Connectors



1.4.1 PS/2 Mouse / Keyboard Connector (J2)

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:

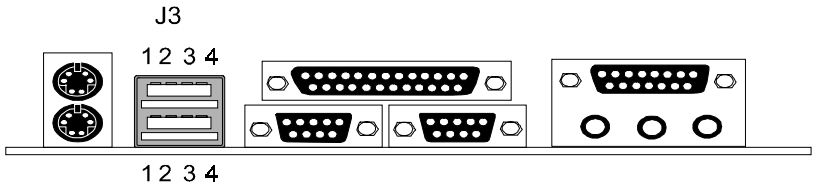


PS/2 Mouse / Keyboard Connectors

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

1.4.2 USB Connectors (J3)

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

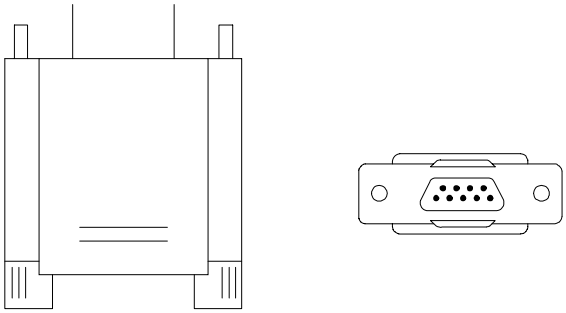
Signal names in brackets ([ ]) are for USB port 1.

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 communications 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 connector. 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.

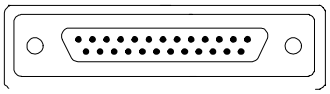
Connectivity

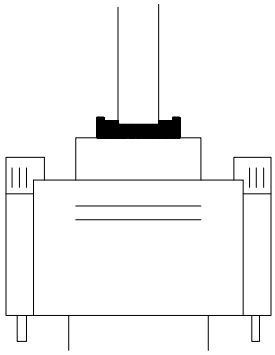
The serial port can be used many ways, and it may be necessary to become familiar with the pinout diagram. The following chart gives you the function of each pin on the 9-pin connector and some of the 25-pin connector. This information can be used when configuring certain software programs to work with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

Signal	Name	DB9 PIN	DB25 PIN
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 (J8)

Unlike the serial port, parallel interface ports have been standardized and should not present any difficulty interfacing peripherals to your system. Sometimes called a 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 / Jumper Setting

1.6.1 CPU Installation Procedure

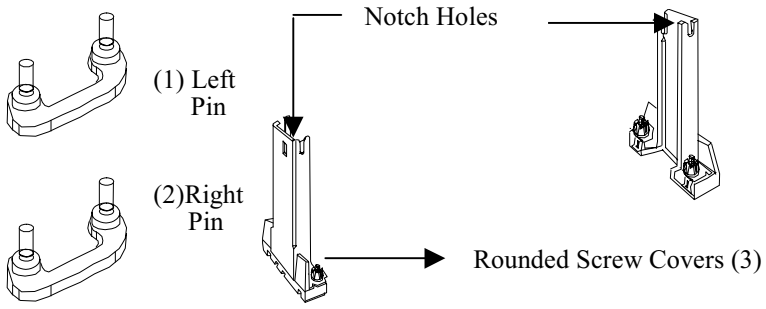
Motherboard

The M6TZF motherboard provides one Single Edge Contact (SEC) slot. This slot allows you to install a Pentium II /Pentium III 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 and its heat sink, as well as to cool 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 Pentium II CPU retention kit components. (ATTENTION: The CPU installation component color and shape may vary slightly based on kits coming from different suppliers.)



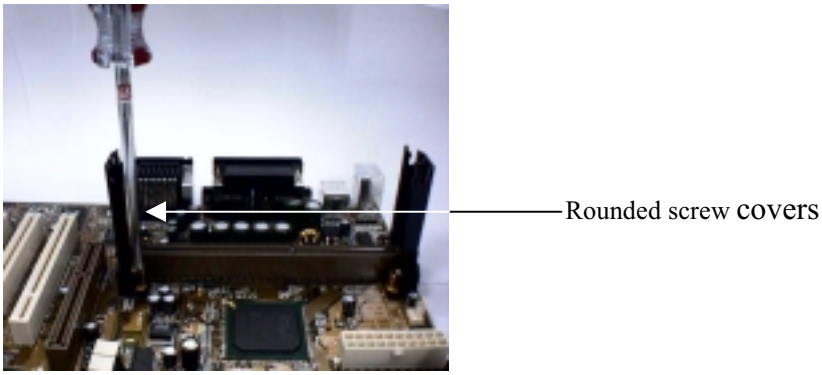
Pentium II Heat Sink Pins **Pentium II Heat Sink**

M6TZF CPU Special Installation and Setup：

Install Pentium II / Pentium III / Celeron :

1．Installing the Heat Sink Support Frame：

The Heat Sink Support Base can only be inserted 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.

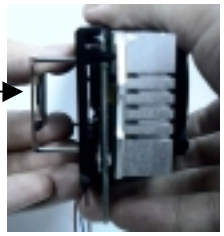


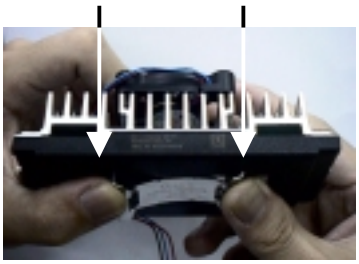
2 · Installing the CPU Heat sink :

Take the smooth side of the Heat Sink and bind it closely together with the CPU. Next, at the ends of the Heat Sink, clip the CPU together with the Heat Sink. Please verify that there is no space between the Heat Sink and CPU unit. WARNING: If there is any space between the CPU and Heat Sink, the CPU will over-heat severely and may be damaged.

Attach the metal clips at ends of the CPU

Push the clips on the Heat Sink and CPU unit to tightly bind them together. The arrows mark the location.

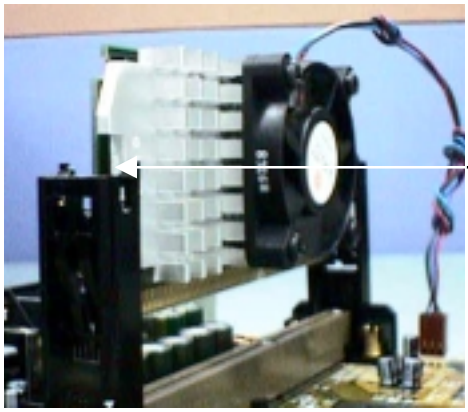




unit

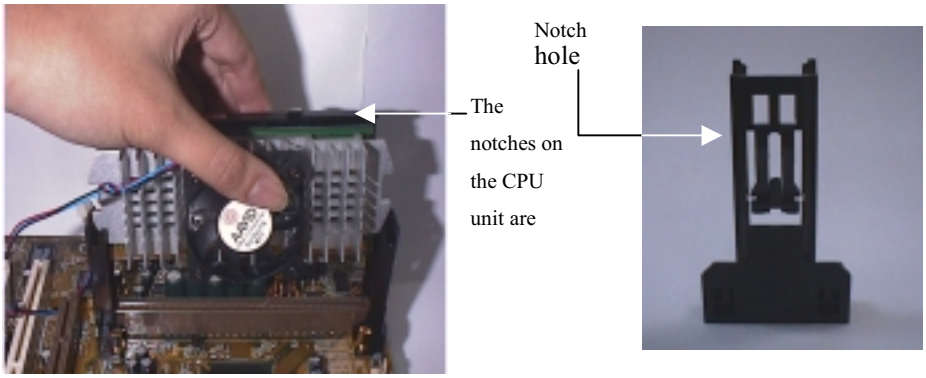
3 · Insert the CPU into the SEC Solt :

(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.

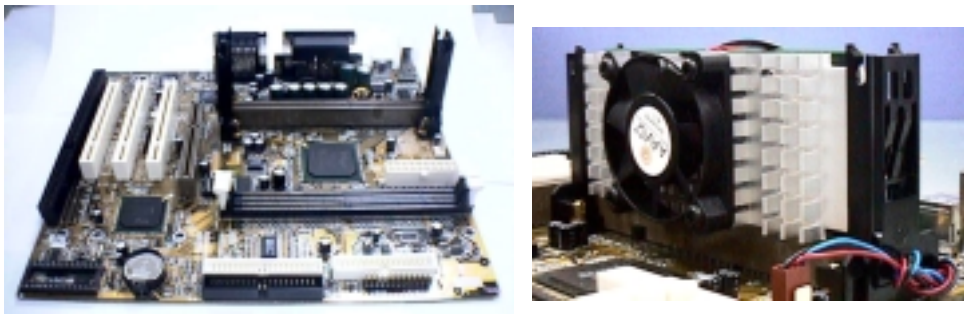


The correct direction to insert the Heat Sink and CPU into the Heat Sink Support Frame should allow you to easily insert them.

(2) Pushing the CPU unit into the frame, wait 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.



(3) 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.

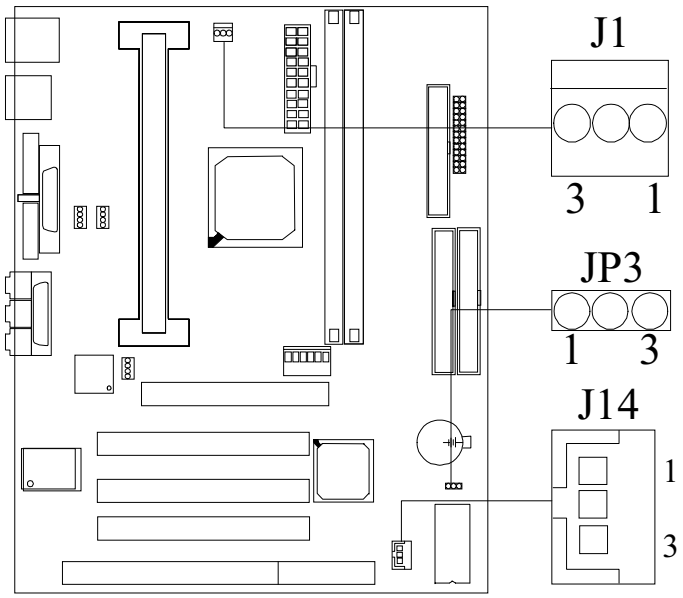


1.6.2 CPU Clock Selection (SW1)

CPU Speed	RATIO	SW1 (1)	SW1 (2)	SW1 (3)	SW1 (4)	SW1 (5)	SW1 (6)
233MHz	66 x 3.5	OFF	OFF	ON	ON	ON	ON
266MHz	66 x 4.0	ON	ON	OFF	ON	ON	ON
300MHz	66 x 4.5	OFF	ON	OFF	ON	ON	ON
333MHz	66 x 5.0	ON	OFF	OFF	ON	ON	ON
366MHz	66 x 5.5	OFF	OFF	OFF	ON	ON	ON
400MHz	66 x 6	ON	ON	ON	ON	ON	OFF
433MHz	66 x 6.5	OFF	ON	ON	ON	ON	OFF
466MHz	66 x 7	ON	OFF	ON	ON	ON	OFF
500MHz	66 x 7.5	OFF	OFF	ON	ON	ON	OFF
533MHz	66 x 8	ON	ON	OFF	ON	ON	OFF
350MHz	100 x 3.5	OFF	OFF	ON	OFF	OFF	ON
400MHz	100 x 4.0	ON	ON	OFF	OFF	OFF	ON
450MHz	100 x 4.5	OFF	ON	OFF	OFF	OFF	ON
500MHz	100 x 5.0	ON	OFF	OFF	OFF	OFF	ON
550MHz	100 x 5.5	OFF	OFF	OFF	OFF	OFF	ON
600MHz	100 x 6.0	ON	ON	ON	OFF	OFF	OFF
650MHz	100 x 6.5	OFF	ON	ON	OFF	OFF	OFF
700MHz	100 x 7.0	ON	OFF	ON	OFF	OFF	OFF
750MHz	100 x 7.5	OFF	OFF	ON	OFF	OFF	OFF
800MHz	100 x 8.0	ON	ON	OFF	OFF	OFF	OFF

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.



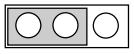
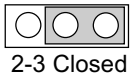
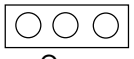
1.7.1 CPU Cooling Fan Power Connector (J1)

Pin No.	Assignment
1	Common
2	+12V
3	Fan R.P.M Sense

1.7.2 Wake-On-LAN Header (J14)

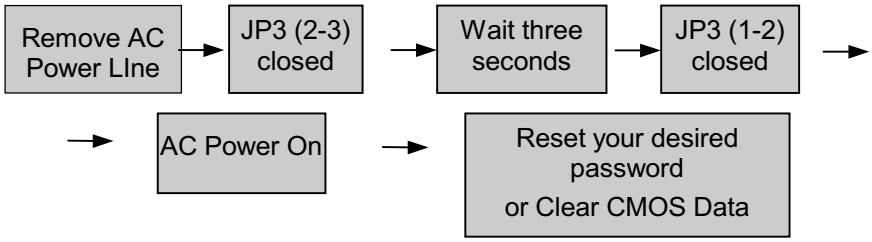
Pin No.	Assignment
1	+5 V Standby Voltage
2	Ground
3	MP-Wakeup

1.7.3 CMOS Function Selection (JP3)

JP3	Assignment
 1-2 Closed	Normal Operation (default)
 2-3 Closed	Clear CMOS Data (*Note)
 Open	Onboard Battery Disabled

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

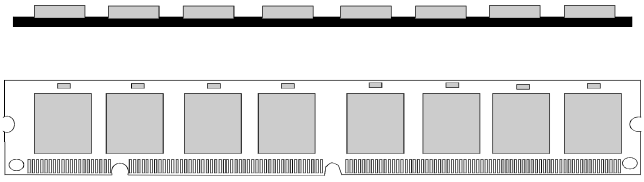
1.8.1 DIMM

DRAM Access Time : 3.3V Unbuffered SDRAM PC100 Type required.
DRAM Type : 8MB/16MB/32MB/64MB/128MB DIMM Module
(168pin)

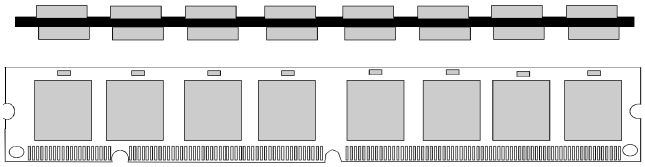
Total Memory Size (MB)	Bank 0 DIMM 1	Bank 1 DIMM 2
8M	8M x 1 pc	----
16M	16M x 1 pc	----
32M	32M x 1 pc	----
64M	64M x 1 pc	----
128M	128M X 1pc	----
16M	8M x 1 pc	8M x 1 pc
24M	16M x 1 pc	8M x 1 pc
40M	32M x 1 pc	8M x 1 pc
72M	64M x 1 pc	8M x 1 pc
136M	128M x 1pc	8M x 1 pc
24M	8M x 1 pc	16M x 1 pc
32M	16M x 1 pc	16M x 1 pc
48M	32M x 1 pc	16M x 1 pc
80M	64M x 1 pc	16M x 1 pc
144M	128M x 1pc	16M x 1pc
40M	8M x 1 pc	32M x 1 pc
48M	16M x 1 pc	32M x 1 pc
64M	32M x 1 pc	32M x 1 pc
96M	64M x 1 pc	32M x 1 pc
160M	128M x 1pc	32M x 1pc
72M	8M x 1 pc	64M x 1 pc
80M	16M x 1 pc	64M x 1 pc
96M	32M x 1 pc	64M x 1 pc
128M	64M x 1 pc	64M x 1 pc
192M	128M x 1pc	64M x 1pc
256M	128M x 1pc	128M x 1pc

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

1.8.2 How to install a DIMM Module



Single Sided DIMM

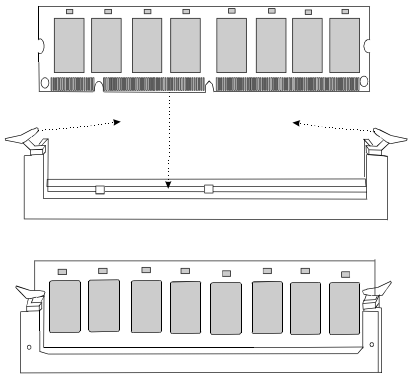


Double Sided DIMM

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.



1.9 Audio Subsystem

Chipset:

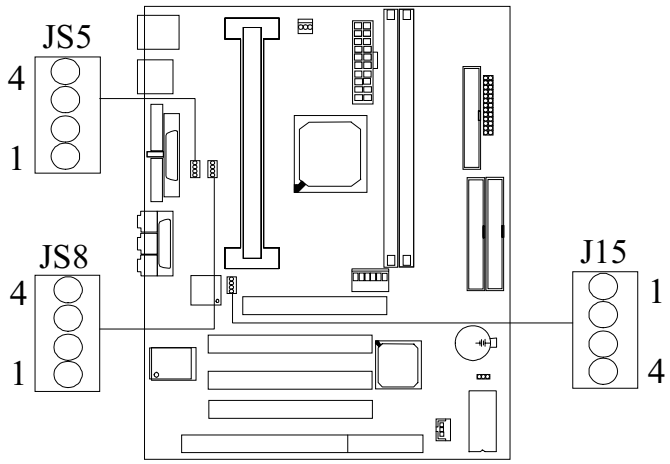
– ESS ES1938S Solo-1

Interface:

– PCI Interface

Features

– Full native DOS games compatibility
– High-Quality ESFM music synthesizer.
– Software Wavetable synthesizer.
– Integrated Spatializer 3D audio effects processor.
– 16-Bit stereo ACD and DAC.
– Full-Duplex operation for simultaneous record and playback.
– Advanced power management meets ACPI standards.
– Supports PC games and applications for Sound Blaster and Sound Blaster Pro, Microsoft Windows Sound System, PC 97/PC 98 and WHQL specifications.
– PCI 2.1 interface support.



1.9.1 CD Audio Input Connector (JS5/JS8)

Pin No. of JS5	Assignment
4	Right Channel Input
3	GND
2	GND
1	Left Channel Input

Pin No. of JS8	Assignment
4	GND
3	Right Channel Input
2	GND
1	Left Channel Input

1.9.2 TAD Connector (J15)

Pin No.	Assignment
1	Monaural-in connect to MODEM speaker-out
2	GND
3	GND
4	Mic-out connect to MODEM Microphone-in

2. BIOS Setup

Entering Setup

Power on the computer and press <**Del**> immediately allowing you to enter Setup. The other way to enter Setup is to power on the Computer, and when the message below appears briefly at the bottom of the screen during the POST (Power On Self Test), press the <**Del**> key or simultaneously press the <**CTRL**>, <**Alt**>, and <**Esc**> keys.

TO ENTER SETUP BEFORE BOOT PRESS CTRL-ALT-ESC OR DEL KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing the < **CTRL**>, <**Alt**>, and <**Delete**> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed, and you will again be asked to:

PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP

Main Menu

The on line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu/Option Page Setup Menu

Press <**F1**> to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window Press <**Esc**>.

Control Keys

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item at left
Right arrow	Move to the item at right
Esc key	Main Menu:make a space Quit and do not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu: Exit current page and return to Main Menu
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
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift) F2 key	Change color to one of 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

2.1 Main Menu

Once you enter AWARD BIOS CMOS Setup Utility, the Main Menu (**Figure 1**) will appear on the screen. The Main Menu allows you to select an item and press <**Enter**> to accept or enter its sub-menu.

■ **Figure 1. Main Menu**

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

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

Standard CMOS Setup

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

BIOS Features Setup

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

Chipset Features Setup

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

Power Management Setup

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

PnP / PCI Configuration

This category specifies the value (in units of PCI bus clocks) of the latency timer for this PCI bus master and the IRQ level for PCI device.

Load Setup Defaults

Chipset defaults indicates the values required by the system for maximum performance. The OEM manufacturer may change to defaults through MODBIN before the binary image burn into the ROM.

Integrated Peripherals

This setup page includes all the items for Integrated Peripherals features.

Supervisor Password / User Password Setting

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

IDE HDD Auto Detection

Automatically configures hard disk parameters.

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 Setup

The items in the Standard CMOS Setup Menu are divided into categories. Each category includes no, one, or more than one setup item. 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 Menu**

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

Date (mm:dd:yy) : Thu, Jan 14 1999
Time (hh:mm:ss) : 11 : 37 : 30

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDS	SECTOR	MODE
Primary Master :	Auto	0	0	0	0	0	0	AUTO
Primary Slave :	Auto	0	0	0	0	0	0	AUTO
Secondary Master :	Auto	0	0	0	0	0	0	AUTO
Secondary Slave :	Auto	0	0	0	0	0	0	AUTO

Drive A :1.44MB, 3.5 in.
Drive B :None

Video :EGA/VGA
Halt On :All,But Keyboard

Base Memory :
Extended Memory :
Other Memory :
Total Memory :

Esc : Quit ↑ ↓ → ←: Select Item PU/PD/+/-:Modify
F1 : Help (Shift) F2 : Change Color

Date

The Date format is **<day><month><date><year>**.

Day	The day, from Sun to Sat, is determined by the BIOS and is display-only
Date	The date, from 1 to 31 (or the maximum allowed in the month)
month	The month, Jan through Dec
year	The year, from 1994 through 2079

Time

The time format is **<hour><minute><second>**. The time is calculated based on the 24-hour military-time clock. For example, 2 p.m. is 14:00:00.

Hard Disk Type

This categories identifies the types of hard disk(s) that have been installed in the computer. There are 46 predefined types and a user definable type. Type 1 to Type 45 are predefined. Type "User" is user-definable. Type "Auto" is automatically defined by BIOS.

Press **<PgUp>** or **<PgDn>** to select a numbered hard disk type or type the number and press **<Enter>**. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not listed, you can use Type "User" to define your own drive type manually.

If you select type "User", related information is asked to be entered for several items. Enter the information directly from the keyboard and press **<Enter>**. This information should be provided in the documentation from your hard disk vendor or the system manufacturer. Most new drives will also have the parameters given on the label on top of the drive.

CYLN	number of cylinders
HEAD	number of heads
WPCOM	write precompensation
SEC	number of sectors
LBA MODE	type of LBA mode
BLK MODE	type of Block mode
PIO MODE	type of PIO
32BIT MODE	type of 32-Bit transfer mode

If a hard disk has not been installed select "NOT Installed" and press **<Enter>**.

Drive A Type/Drive B Type

The category identifies the types of floppy disk drive A / drive B that have been installed in the computer.

None	No floppy drive installed
360K, 5 1/4	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5 1/4	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3 1/2	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3 1/2	3-1/2 inch double-sided drive; 1.44 megabyte capacity
2.88M, 3 1/2	3-1/2 inch double-sided drive; 2.88 megabyte capacity

Video

This category selects the type of adapter used for the primary system monitor, and must match your video display card and monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode
CGA 80	Color Graphics Adapter, power up in 80 column mode
MONO	Monochrome adapter, includes high resolution

	monochrome adapters

Halt On

The category determines whether the computer will stop if an error is detected during power up.

No errors	Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted.
All errors	The system boot will not stop for any error that may be detected.
All, But Keyboard	The system boot will not stop for a keyboard error, it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error, it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error, it will stop for all other errors.

Memory

This category is display-only which is determined by the POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for system with 512K memory installed on the motherboard, or 640K for system with 640K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

Other Memory

This refers to the memory located in the 640K address space. This is the memory that can be used for different applications. DOS uses this area to load device drivers to keep as much base memory free for application programs. The most

common use for this area is Shadow RAM.

2.3 BIOS Features Setup

!! WARNING !! **The information about BIOS defaults in the manual** (Figure 3.4.5.6.8) **is just for reference, please refer to the BIOS installed on board, for update information.**

■ **Figure 3. BIOS Features Setup Menu**

ROM PCI/ISA BIOS (xxxxxxxx)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Disabled	D0000-D3FFF Shadow	: Disabled
Processor Number Feature	: Disabled	D4000-D7FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D8000-DBFFF Shadow	: Disabled
Boot From LAN First	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Sequence	: A,CDROM,C		
Swap Floppy Drive	: Disabled		
Boot Up Floppy Seek	: Enabled		
Boot Up NumLock Status	: On		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250	ESC : Quit ↑ ↓ → ← : Select Item	
Security Option	: Setup	F1 : Help	PU/PD/+/- : Modify
PCI/VGA Palette Snoop	: Disabled	F5 : Old Values	<Shift> F2 : Color
OS Select For DRAM > 64MB	: Non-OS2	F7 : Load Setup Defaults	

Virus Warning

This category flashes on the screen. During and after the system boot up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and an error message will appear. In the mean time, you can run an anti-virus program to locate the problem.

Disabled (default)	No warning message appears when anything attempts to access the boot sector or hard disk partition table.
Enabled	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.

CPU Internal Cache

The default value is Enabled.

Enabled (default)	Enable cache
Disabled	Disable cache

External Cache

Cache memory is additional memory that is much faster than conventional DRAM (system memory). Most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU.

Enabled (default)	Enable cache
Disabled	Disable cache

CPU L2 Cache ECC Checking

Choose Enabled or Disabled. This option enables the level 2 cache memory ECC (error check correction). Using 66MHz CPU BUS Deschute processor, set to Enabled or Disabled. 100MHz CPU BUS Deschute processor, always set to Enabled. Klamath processor always set to Disabled.

Processor Number Feature (Support Pentium III only)

The Intel processor serial number control option.

Enabled
Disabled (default)

Quick Power On Self Test

This option enables the level 2 external cache memory.

Enabled (default)	Enable quick POST
Disabled	Normal POST

Boot from LAN First

During Enabled, If there's a LAN card onboard the priority from booting will be from the LAN.

Boot Sequence

This option determines which drive the computer searches the OS at boot-up. The settings are "A, C, SCSI", "C, A, SCSI", "C, CDROM, A", "CDROM, C, A", "D, A, SCSI", "E, A, SCSI", "F, A, SCSI", "SCSI, A, C", "SCSI, C, A" or "C only",etc. **The default is "A, CDROM,C".**

Swap Floppy Drive

Switches the floppy disk drive between being designated as A and B. **Default is Disabled.**

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 720K, 1.2M, and 1.44M are all 80 tracks.

Enabled (default)	BIOS searches for the floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS cannot tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K.

Boot Up NumLock Status

The default value is On.

On (default)	Numpad is number keys.
Off	Numpad is arrow keys.

Gate A20 Option

Gate A20 refers to the way the system addresses memory above 1MB (extended memory). When set to Fast, the system chipset controls Gate A20. When set to Normal, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows.

Fast (default)

Typematic Rate Setting

This determines the typematic rate.

Enabled	Enable typematic rate and typematic delay programming.
Disabled (default)	Disable typematic rate and typematic delay programming. The system BIOS will use default value of these 2 items and the default is controlled by keyboard.

Typematic Rate (Chars/Sec)

6 (default)	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

Typematic Delay (Msec)

Choose the length of delay from the time you press a key and the character repeating. (units are mil-sec)

Security Option

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

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

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.

Disabled (default)	Disables the function.
Enabled	Enables the function.

OS Selection for DRAM > 64MB

Allows OS/2 to be used with > 64MB of DRAM. Settings are Non-OS/2 (default) and OS/2. Set to OS/2 if using more than 64MB and running OS/2.
DEFAULT is Non-OS2.

Video BIOS Shadow

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

Enabled (default)	Optional ROM is enabled.
Disabled	Optional ROM is disabled.

C8000 - CFFFF Shadow / D0000 - DFFFF Shadow

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

Enabled	Optional ROM is shadowed.
Disabled (default)	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 Chipset Features Setup

The Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

■ **Figure 4. Chipset Feature Setup Menu**

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

SDRAM RAS-to CAS Delay : 3	
SDRAM RAS Precharge Time : 3	
SDRAM CAS Latency Time : Auto	
SDRAM Precharge Control : Disabled	
System BIOS Cacheabled : Disabled	
Video BIOS Cacheable : Disabled	
Video RAM Cachable : Disabled	
8 Bit I/O Recovery Time : 1	
16 Bit I/O Recovery Time : 1	
Memory Hole At 15M-16M : Disabled	
Passive Release : Enabled	
Delay Transaction : Disabled	
AGP Aperture Size (MB) : 64	
	ESC : Quit ↑ ↓ → ←: Select Item
	F1 : Help PU/PD/+/- : Modify
	F5 : Old Values <Shift> F2 : Color
	F7 : Load Setup Defaults

SDRAM RAS-to-CAS Delay

This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

3 (default)

SDRAM RAS Precharge Time

If an insufficient number of cycles is allowed for RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system.

3 (default)

SDRAM CAS latency Time

You can select CAS latency time in HCLKs of 2 or 3. The system board designer should set the values in this field, depending on the DRAM installed.

Auto (default)

SDRAM Precharge Control

Enable this function to selective auto precharge for comparably different SDRAM components.

Disabled (default)

System BIOS Cacheable

When enabled, accesses to the system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is enable.

Enabled	BIOS access cached
Disabled (default)	BIOS access not cached

Video BIOS Cacheable

As with caching the System BIOS above, enabling the Video BIOS cache will cause access to video BIOS addressed at C0000H to C7FFFH to be cached, if the cache controller is also enabled. Data from the CPU to the PCI bus can be posted (buffered by the controller).

Enabled	Video BIOS access cached

Disabled (default) Video BIOS access not cache

Video RAM Cacheable

Select Enabled allows caching of video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

8 Bit I / O Recovery Time

The recovery time is the length of time, measured in CPU clocks, which the system will delay after the completion of an input / output request. This delay takes place because the CPU is operating so much faster than the input / output bus that the CPU must be delayed to allow for the completion of the I / O.
The item allows you to determine the recovery time allowed for 8 bit I / O. Choices are from NA, 1 to 8 CPU clocks.

1(default)

16 Bit I / O Recovery Time

This item allows you to determine the recovery time allowed for 16 bit I/O. Choices are from NA, 1 to 4 CPU clocks.

1 (default)

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.

Disabled (default)

Passive Release

When Enabled, CPU to PCI bus accesses is allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM.

Enabled (default)

Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

Disabled (default)

AGP Aperture Size (MB)

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

64 (default)

2.5 Power Management Setup

■ **Figure 5. Power Management Setup Menu**

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

Power Management	: User Define	** Reload Global Timer Events **	
PM Control by APM	: Yes	IRQ [3-7 , 9-15] , NMI	: Disabled
Video Off Method	: DPMS	Primary IDE 0	: Disabled
Video Off After	: Standby	Primary IDE 1	: Disabled
Doze Mode	: Disabled	Secondary IDE 0	: Disabled
Standby Mode	: Disabled	Secondary IDE 1	: Disabled
Suspend Mode	: Disabled	Floppy Disk	: Disabled
HDD Power Down	: Disabled	Serial Port	: Enabled
Throttle Duty Cycle	: 62.5 %	Parallel Port	: Disabled
PCI/VGA Act-Monitor	: Disabled		
Soft-Off by PWR-BTTN	: Instant - Off		
CPUFAN off In Suspend	: Enabled		
Power on by Ring	: Disabled		
Resume by Alarm	: Disabled	ESC : Quit ↑ ↓ → ← : Select Item	
		F1 : Help	PU/PD/+/- : Modify
Wake on LAN	: Disabled	F5 : Old Values	<Shift> F2 : Color
IRQ 8 Break Suspend	: Disabled	F7 : Load Setup Defaults	

Power Management

User Define (Max. Saving)	Users can configure their own power management.
Min Saving	Pre-defined timer values are used such that all timers are at their MAX value.
Max Saving	Pre-defined timer values are used such that all timers are at their MIN value.

PM Control by APM

No	System BIOS will ignore APM when Power Management is on.
Yes (default)	System BIOS will wait for APM's prompt before it enters any PM mode.

Video Off Method

Blank Screen	The system BIOS will only blank the screen when disabling video.
V/HSYNC+Blank	In addition to the above, BIOS will also turn off the V-SYNC & H-SYNC signals from VGA card to monitor.
DPMS (default)	This function is enabled only for a VGA card supporting DPMS.

Video Off After

As the system moves from lesser to greater power-saving modes, select the mode in which you want the monitor to blank:

Standby (default)

Doze Mode

This option specifies how long the CPU is continuously idle before entering the doze mode. When the system is in Doze mode, the screen will be blank.

Standby Mode

After selected period of system inactivity, the fixed disk drive and video shut-off while all other devices still operate at full speed.

Disabled (default)

Suspend Mode

This options allows the user to indicate how long the system will be idle before entering the suspend mode, which turns off the CPU and saves the energy of the system

HDD Power Down

After the selected period of drive inactivity, the hard disk drive powers down while all other devices remain active.

Disabled (default)

Throttle Duty Cycle

When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

62.5 % (default)

PCI/VGA Act-Monitor

During Enabled, if there's no activity in the monitor screen the system will go into Power Saving Mode. During Disabled, the system will go into Power Saving Mode, whether there is activity in the monitor screen or not. The settings are Disabled and Enabled.

Soft-Off by PWR-BTTN

This item allows you to set the off function of power button by software control.

Instant-Off (default)

CPUFAN off In Suspend

When system in suspend mode, the CPUFAN will turn off.

Power On by Ring

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Disabled (default)

.

Resume by Alarm

When set to Enable RTA Alarm Resume, you coule set the date (of month) and timer (hh:mm:ss), a any event occurring at will awaken a system which has been powered down.

Disabled (default)

Wake up on LAN

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

Disabled (default) Wake up on LAN not supported.

IRQ 8 Break Suspend

You can turn On or Off monitoring of IRQ 8 (the Real Time Clock) so it does not awaken the system from Suspend mode.

Disabled (default)

IRQ [3-7,9-15],NMI

The default value is “Legacy ISA” OR “PCI/ISA PnP”.

Disabled (default)

Primary IDE 0/1

The default value is Disabled.

Enabled	Enable monitor Primary IDE 0/1 for Green event.
Disabled (default)	Disable this function.

Secondary IDE 0/1

The default value is Disabled.

Enabled	Enable monitor Secondary IDE 0/1 for Green event.
Disabled (default)	Disable this function.

Floppy Disk

The default value is Disabled.

Enabled	Enable monitor Floppy Disk for Green event.
Disabled (default)	Disable this function.

Serial Port

The default value is Enabled.

Enabled (default)	Enable monitor Serial Port FOR Green event.
Disabled	Disable this function.

Parallel port

The default value is Disabled.

Enabled	Enable monitor Parallel Port for Green event.
Disabled (default)	Disabled this function.

2.6 PNP / PCI Configuration Setup

■ **Figure 6. PNP / PCI Configuration Setup Menu**

ROM PCI/ISA BIOS (xxxxxxxx)
PNP / PCI FUNCTION SETUP
AWARD SOFTWARE, INC.

PNP OS Installed : Yes	Assign IRQ for VGA : Enabled
Resources Controlled By : Auto	Assign IRQ for USB : Enabled
Reset Configuration Data : Disabled	
	ESC : Quit : Select Item
	F1 : Help PU/PD/+/- : Modify
	F5 : Old Values <Shift> F2 : Color
	F7 : Load Setup 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 Windows™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".

Resources Controlled By "Auto" or "Manual"

By Choosing "Auto" the system BIOS will detect the system resource and automatically assign the relative IRQ and DMA channel for each peripheral.
By Choosing "Manual"(default), the user will need to assign IRQ & DMA for add-on cards. Be sure that there are no IRQ/DMA and I/O ports conflict.

Reset Configuration Data

The system BIOS supports the PnP feature so the system needs to record which resource is assigned and protect 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.

Assign IRQ For VGA

Lets the user choose which IRQ to assign for VGA card.

Assign IRQ For USB

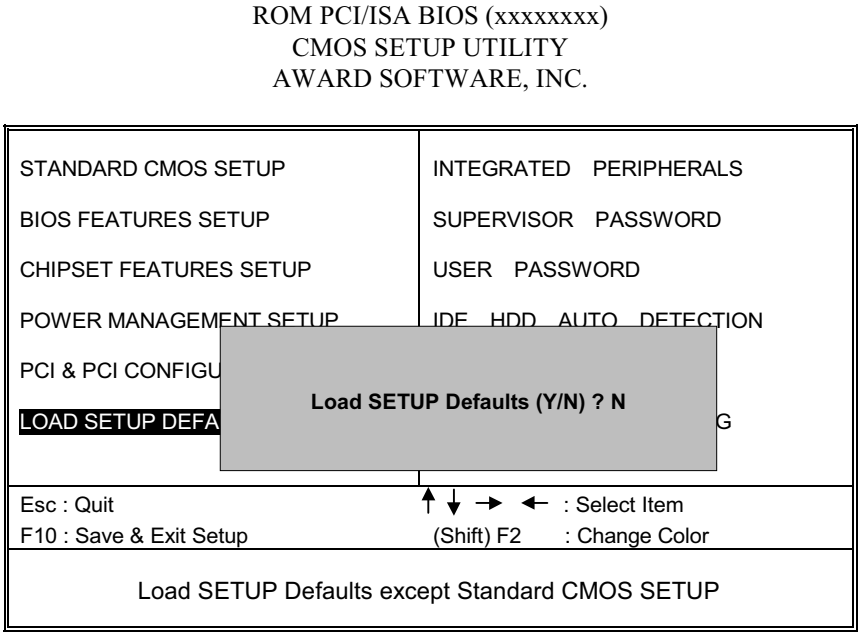
Set to Enabled when USB port will be used. Set to Disable if the USB port will not be used.

Enabled (default)	Assign a specific IRQ for USB.
Disabled	No IRQ is assigned for USB.

2.7 Load Setup Defaults

Chipset defaults indicate the values required by the system for maximum performance.

- **Figure 7. Load Setup Defaults Screen**



If you wish to load the SETUP Defaults, change the prompt to <**Y**> and press <**ENTER**>.

2.8 Integrated Peripherals Setup

■ **Figure 8. Integrated Peripherals Setup Menu**

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

IDE HDD Block Mode	: Enabled	Onboard Parallel Port	: 378/IRQ7
IDE Primary Master PIO	: Auto	Parallel Port Mode	: EPP 1.7+SPP
IDE Primary Slave PIO	: Auto		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDAM	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Support	: Disabled		
OnBoard Sound Chip	: Enabled		
Init Display First	: PCI Slot		
Onboard FDC Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4		
Onboard Serial Port 2	: 2F8/IRQ3	ESC : Quit ↑ ↓ → ← : Select Item	
UART2 Mode	: Standard	F1 : Help PU/PD/+/- : Modify	
		F5 : Old Values <Shift> F2 : Color	
		F7 : Load Setup Defaults	

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support.

Enabled (default)

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.

Auto (default)

IDE Primary / Secondary Master / Slave UDMA

Ustra 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.

Auto (default)

On-Chip Primary IDE / Secondary PCI IDE

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

Enabled (default)

USB Keyboard Support

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

Disabled (default)

OnBoard Sound Chip

This item allows you determine to use the function of PCI Sound chip built on board.

Disabled
Enabled (default)

Init Display First

This item allows you decide to activate PCI Slot or AGP first.

The Choices: PCI Slot (default), AGP.

Onboard FDC Controller

Enabled / Disabled The system has an onboard Super I/O chip with a FDD controller that supports 2 FDDs for 360K / 720K / 1.2M / 1.44M / 2.8M. Choose “Enabled” to use the onboard FDD controller for accessing the FDD.

Otherwise choose "Disabled" to use the off-board FDD controller.

Onboard Serial Port 1

Disabled / (3F8 / IRQ4) / (2F8 / IRQ3) / (3E8 / IRQ4) / (2E8 / IRQ3)

Onboard Serial Port 2

Disabled / (3F8 / IRQ4) / (2F8 / IRQ3) / (3E8 / IRQ4) / (2E8 / IRQ3)
The system has an Onboard Super I/O chipset with 2 serial ports.
The Onboard serial ports can be selected as:

Disabled	
3F8 / IRQ4	COM1 uses IRQ4
2F8 / IRQ3	COM2 uses IRQ3
3F8 / IRQ4	COM3 uses IRQ4
2F8 / IRQ3	COM4 uses IRQ3

UART2 Mode

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

Onboard Parallel Port

Disabled there is a built-in parallel port on the on-board Super I/O
(3BCH/IRQ7) Chipset that provides Standard, ESP, and EPP features.
(278H/IRQ5) It has the following options:

Disable	
3BCH/IRQ7	Line Printer port 0
278H/IRQ5	Line Printer port 2
378H/IRQ5	Line Printer port 1

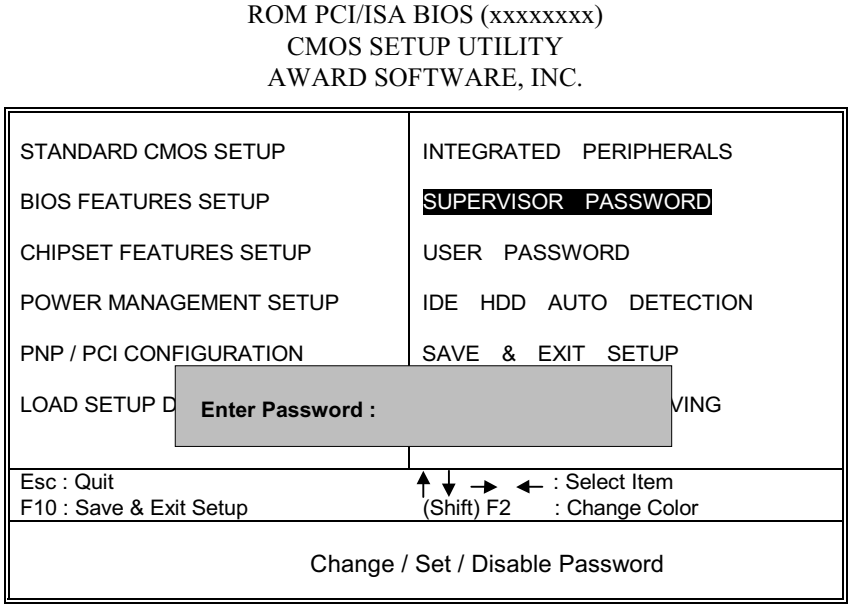
Parallel Port Mode

Select an operating mode for the onboard parallel (printer) port. Select Normal unless your hardware and software require one of the other modes offered in this field.

The choices: PS/2, EPP1.9, ECP, ECPEPP1.9, EPP1.7+SPP (default).

2.9 Supervisor / User Password Setting

■ **Figure 9. Supervisor Password Setting**



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 the system is rebooted or any time 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.

2.10 IDE HDD Auto Detection

Automatically configure hard disk parameters. The parameters shown below are only examples.

■ **Figure 10. Auto Configuration with Optimal Settings Screen**

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

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LAND	SECTOR	MODE
Primary Master	:User	343	665	16	65535	664	63	NORMAL

Select Primary Slave Option (N=Skip) N

OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
1(Y)	0	0	0	0	0	0	NORMAL

Note : Some Oses (like SCO-UNIX Before v5.0) must use “NORMAL” for installation

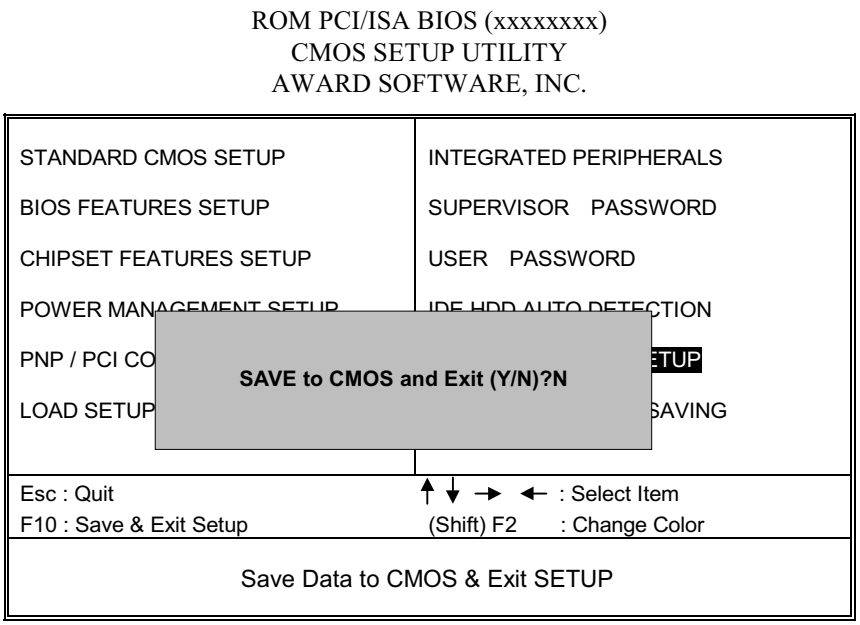
ESC : Skip

When you enter this utility, the screen asks you to select a specific hard disk for Primary Master. If you accept a hard disk detected by the BIOS, you can enter **“Y”** to confirm and then press <**Enter**> to check next hard disk. This function allows you to check four hard disks and you may press the <**Esc**> after the <**Enter**> to exit this function and go back to the Main Menu.

2.11 Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

■ **Figure 11. Save & Exit Setup Screen**



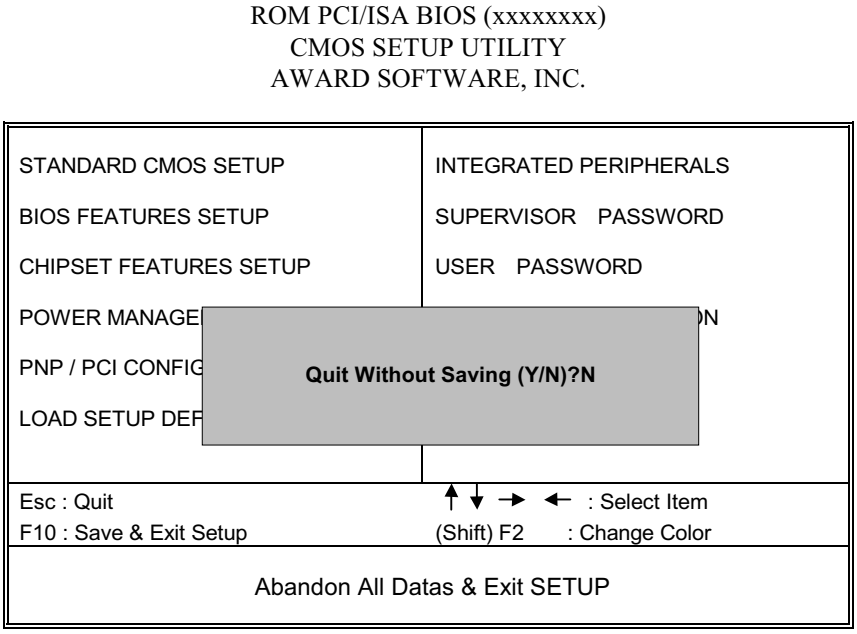
Pressing **<N>** and **<ENTER>** will return you to the Main Menu.

Pressing **<Y>** and **<ENTER>** will save the system parameters and continue with the booting process.

2.12 Exit Without Saving

Abandon all CMOS value changes and exit setup.

- **Figure 12. The Save Settings and Exit Screen**



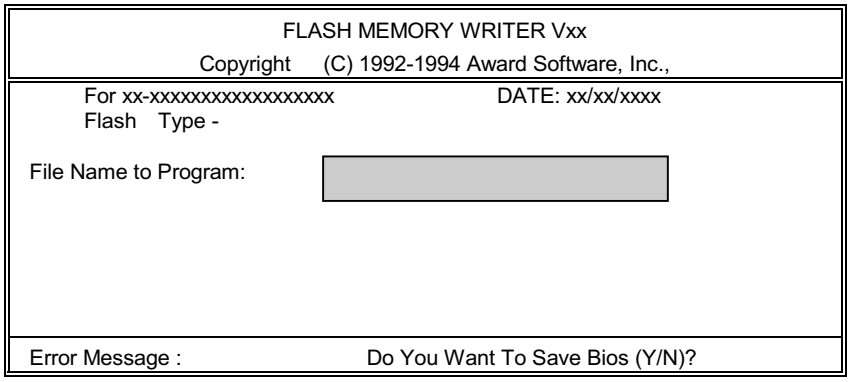
Pressing **<N>** and **<ENTER>** will return you to the Main Menu.

Pressing **<Y>** and **<ENTER>** will continue with booting process without saving any system parameters.

2.13 Application Software

– Please use the "BIOS Utility" diskette to setup Flash Memory.
– The diskette contains the intelligent installation utility **AWDFLASH.EXE**, displayed below.

■ **Figure 13. Flash Memory Writer**



3 Software

3.1 Motherboard Software

NOTE: The mark * means it can be installed directly from CD by using CD Installation Utility (i.e. START.EXE).

3.1.1 Software List

Category	Description	Platform	Location in CD
HighPoint XStore Pro *	Install the drivers to support Ultra DMA mode Hard Drive.	Windows 95/98	\XStore
Intel Bus Master IDE Drivers *	Install the drivers to support Ultra DMA mode Hard Drive.	Windows NT4.0	\Ide
NS LM78+61 Software * (optional)	National Semiconductor LM78+LM61 Software for monitoring voltages, temperature, fan speed.	Windows 95/98	\Sysdiag\Lm7x_61
Award Flash Utility	Used for updating BIOS. (Please refer to chapter - Application Software.)		\Flash

3.1.2 Software Installation

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

- **The drivers can be installed from CD by using CD Installation Utility:**

You can simply put Driver CD into CD-ROM drive and the Installation Utility will autorun 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.

- **The drivers CAN NOT be installed directly from CD by using CD Installation Utility:**

Please read the README.TXT located in the root directory on Multimedia CD to get drivers' location and then refer to the INSTALL.TXT or README.TXT files located in each driver directory on the Driver CD to install drivers.

3.1.3 Using Software

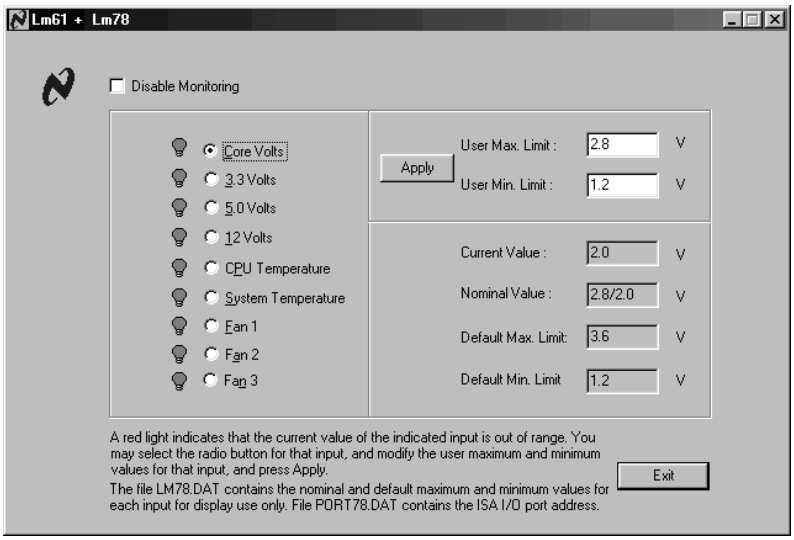
- **In general, you can get more detailed information in the on-line help or readme for the softwares.**

- **Using NS LM78+61 Software (optional)**

After the utility is installed, you can double click the "LM7x_61" shortcut on the screen to invoke the utility.

The drivers CAN NOT be installed directly from CD by using CD Installation Utility:

Please read the README.TXT located in the root directory on Multimedia CD to get drivers' location and then refer to the INSTALL.TXT or README.TXT files located in each driver directory on the Driver CD to install drivers.
Hardware Monitor, on-line help comes with the utility. You can refer to on-line help to make use of the utility.



3.2 ESS Solo-1 (on-board) Software

3.2.1 Software List

Drivers

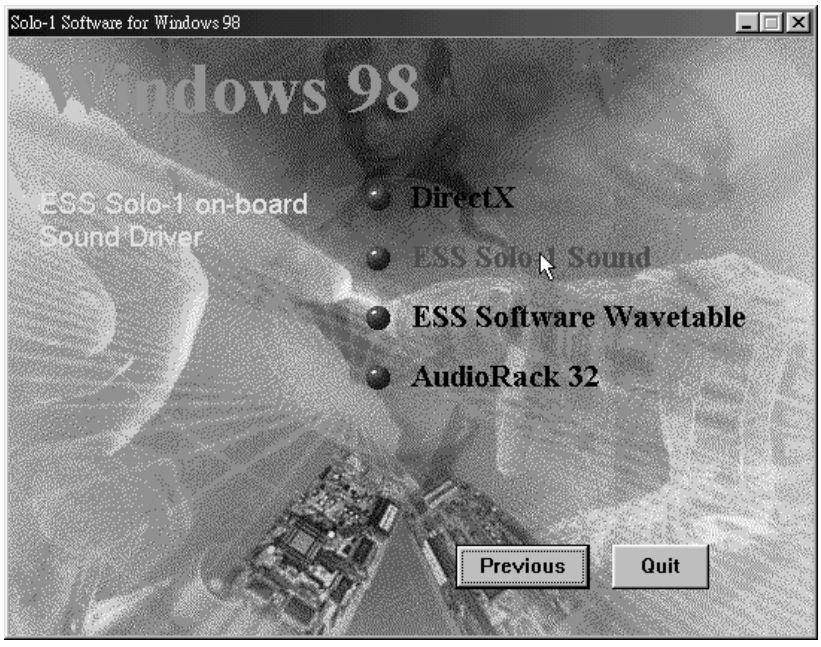
Category	Location in CD
Windows 95 / 98	\Solo1\Win9x
Windows NT 4.0	\Solo1\WinNT40

Applications

Name	Location in CD	Platform
AudioRack 32	\Solo1\Arakp311	Windows 95 / 98

3.2.2 Software Installation

There is an installation wizard, **Driver CD Installation Utility** (START.EXE), located in the root of the CD to let users install drivers directly and conveniently.



3.2.3 Using Software

- **Using AudioRack 32**

After the AudioRack 32 Software Installation completed, please refer to Readme.txt and On-line Help come with AudioRack 32 for the detailed information before using AudioRack 32.

4. 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.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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 (see HARD DISK section of this manual).
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 (see HARD DRIVE section of manual). 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.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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 (see Hard Disk section of this manual for instructions). Re-install all saved data when completed.

PROBLEM

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

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
The IBM PS/2 uses a different format than 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.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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.”

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Screen saver is enabled.		Disable screen saver.

PROBLEM

Keyboard failure.

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

PROBLEM

No color on screen.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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:

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

PROBLEM

C: drive failure.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
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.

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

PROBLEM

Certain keys do not function.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Keys jammed or defective.		Replace keyboard.

PROBLEM

Keyboard is locked, no keys function.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Keyboard is locked.		Unlock keyboard.

05/05/1999
MADE IN TAIWAN
R.O.C