

MBX8440

User's Manual Version A

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Chapter 1 Introduction

1

The mainboard is a high-performance mainboard based on the advanced PENTIUM™ II microprocessor, the AGP, PCI Local Bus and the Intel 440BX chipset.

The mainboard offers a high degree of flexibility in configuration and is fully IBM PC compatible.

1-1 KeyFeatures

- Intel 440BX AGPset™ chipset
- Support 233~450 MHz PENTIUM™ II CPUs and 266/300 Celeron™ with Slot 1.
- Uses 168-pin DIMM modules x 3 auto banking in multiple configuration up to 384MB.
- Supports SDRAM and 3.3V EDO DRAM.
- Provides single bit ECC capability.
- 4 PCI Local Bus slots, and 3 x 16 bits ISA Bus slots.
- All 4 PCI slots support Master mode.
- Supports 32-bits A.G.P. (Accelerated Graphics Port) slot x 1.
- System BIOS support 4 IDE harddisk drivers that don't need device driver for S/W application, the capacity each harddisk can large than 528MB up to 8.4GB.
- PCI Bus master IDE interface on board with two connectors support 4 IDE devices in 2 channel, the PCI IDE Controller supports PIO Mode 0 to Mode 4, Bus master IDE DMA Mode 2 and Ultra DMA 33MB/sec.
- On board super Multi-I/O chip that support 2 serial port with 16550 Fast UART compatible, 1 parallel port with EPP and ECP capabilities, and a floppy disk drive interface.
- On board support PS/2™ mouse Connector.
- On board support PS/2™ Keyboard Connector.

Chapter 1

- 2 x Universal Serial Bus (U.S.B) on board
- Support Ir connector. (optional)
- System BIOS supports NCR810 SCSI BIOS firmware and Green feature function, Plug and Play Flash ROM.
- Use switching regulator to support CPU core voltage.
- Supports LS-120 floppy disk drive (120MB).
- Supports 3V, 5V and 12V 20-pins ATX power connector.
- ATX form factor : 180mm x 305 mm
- Hardware Monitor :
Support CPU/System FAN status monitoring and alarm, CPU voltage, system temperature monitoring.
- Supports SB-LINK™ connector for Creative AWE64 PCI sound card.
- Poly switch resettable fuse over current protection for keyboard and mouse.

1-2 Static Electricity Precautions

Static electricity can easily damage your mainboard.

Observing a few basic precautions can help you safeguard against damage that could result in expensive repairs. Follow the measures below to protect your equipment from static discharge:

- Keep the mainboard and other system components in their anti-static packaging until you are ready to install them.
- Touch a grounded surface before you remove any system component from its protective anti-static packaging. A grounded surface within easy reach is the expansion slot covers at the rear of the system case. or any other unpainted portion of the system chassis.
- During configuration and installation, touch a ground surface frequently to discharge any static electric charge that may build up in your body. Another option is to wear a grounding wrist strap.
- When handling a mainboard or an adapter card, avoid touching its components. Handle the mainboard and adapter cards either by the edges or by the mounting bracket that attaches to the slot opening in the case.

1-3 What 's included in the package?

The mainboard comes packed in a sturdy cardboard shipping carton. The carton contains :

- The Mainboard
- The User's Guide
- The 440BX Utility

Chapter 2

Hardware Configuration

Before you install the mainboard into the system chassis, you may find it convenient to first configure the mainboard hardware. This chapter describes how to set jumpers and install memory modules, and where to attach components.

2

2-1 Mainboard Component Locations

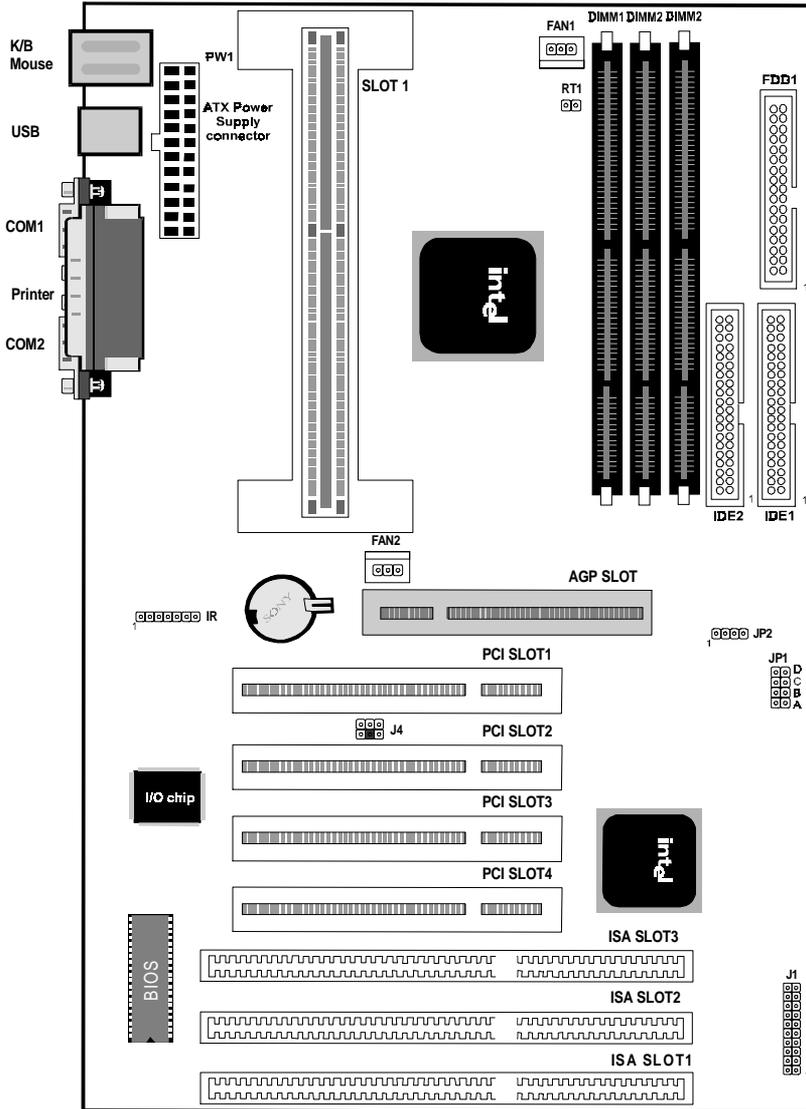


Figure 2-1 Mainboard Component Locations

2-2 Power Precautions

Before you begin configuration, make sure you are working with an unplugged mainboard. Many components are powered by low-voltage current, but there still may be a dangerous electric current coming from the leads and power supply. You should take the following precautions:

- Turn off the power supply, and unplug the power cord before you begin
- Unplug all cables that connect the mainboard to any external devices.

2-3 Connectors

Attach system components and case devices to the mainboard via the mainboard connectors. A description of each .i.connector; and its connector pins follows. See Figure 2-1 for the location of the connectors on the mainboard.

Note:

Before making connections to the board, make sure that power to the system is turned off.

2-4 Jumper Settings

You can configure hardware options by setting jumper on the mainboard. See Figure 2-1 for jumper locations.

Set a jumper as follows:

- Short a jumper by placing the plastic jumper cap over two pins of the jumper.
- Open the pins of a jumper by removing the jumper cap.

Note:

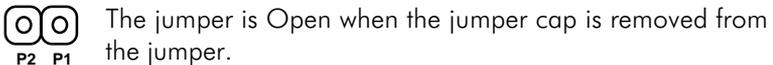
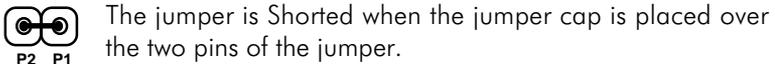
When you open the jumper, attach the plastic jumper cap to one of the pins so you won't lose it.

Symbols:

For setting 3-pin jumpers, the symbols below are used:

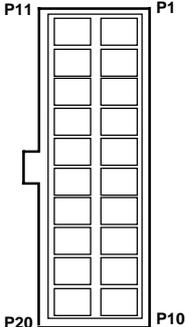


For setting 2-pin jumpers, the following symbols are used:



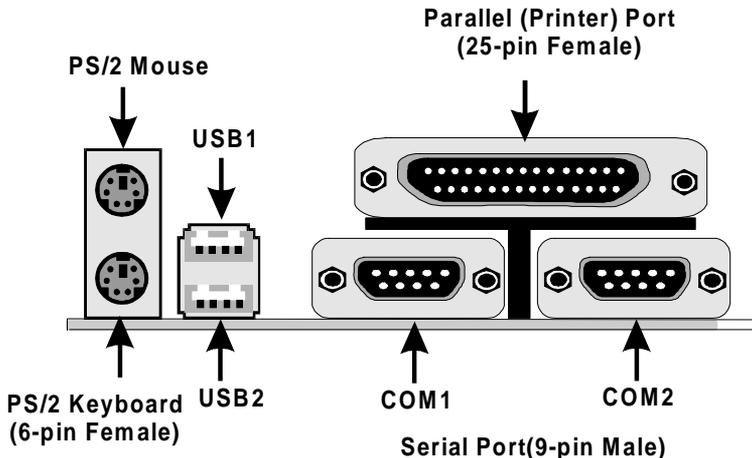
PW1 ATX Power Supply Connector

This connector connects to a ATX power supply, The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.

	Pin	Description	Pin	Description
	1	3.3V	2	3.3V
	3	GND	4	5V
	5	GND	6	5V
	7	GND	8	PW-OK
	9	5VSB	10	12V
	11	3.3V	12	-12V
	13	GND	14	PS-ON
	15	GND	16	GND
	17	GND	18	-5V
	19	5V	20	5V

Note:

Make sure that the ATX power supply can take at least 10mA load on the 5 volt standby lead (5VSB).



Keyboard Connector

Pin	Description	Pin	Description
1	Keyboard Data	2	N.C.
3	Ground	4	+5VDC
5	Keyboard Clock	6	N.C.

PS/2 Mouse Connector

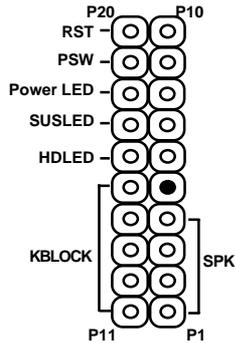
Pin	Description	Pin	Description
1	Mouse Data	2	N.C.
3	Ground	4	+5VDC
5	Mouse CLK	6	N.C.

USB (Universal Serial Bus Connector)

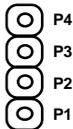
This connector supports two port USB Bus.

Pin	Description	Pin	Description
1	+5 VDC	5	+5VDC
2	DATA -	6	DATA-
3	DATA +	7	DATA+
4	Ground	8	Ground

COM1, COM2 Serial Port Connectors**LPT1 Parallel (Printer) Connector**

J1 KBLOCK, SPK, RST, HDLED, ATXSW, SUSLED, Power LED**SPK Speaker Connector**

Attach the system speaker to connector SPK.



Pin	Description
1	DATA Out
2	NC
3	Ground
4	+5V

KBLOCK Keylock + Power LED Connectors

KB Lock is a keylock connector that enables and disables the keyboard and the Power-LED on the case.



Pin	Description
11	LED Output
12	NC
13	Ground
14	Keylock
15	GND

HDLED Hard Disk LED Connector

Pin	Description
6	5V
16	Active Low

SUSLED Suspend Mode LED Connector

Pin	Description
7	5V
17	Active Low

Power LED Connector

Pin	Description
8	5V
18	GND

ATX SW Power Switch Connector

Attach the power suspend switch cable to this connector. Holding the power switch for more than 4 seconds will power off the system. Pushing the power button for less than 4 seconds the system is into sleep mode.



Setting	Description
Open	Normal mode (Default)
Short	Suspend mode

RST Reset Switch Connector

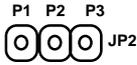
Attach the Reset switch cable to this connector.



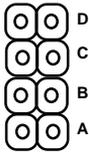
Setting	Description
Open	Normal Mode
Short	Reset System

JP2 CPU Speed Selectors

The mainboard has a clock generator that lets you choose the CPU frequency by settings jumper JP2. You can set CPU speed to 66/100 MHz as shown below :



CPU	JP2
100 MHz	1-2
66 MHz	2-3

JP1 CPU Internal Clock Speed Selectors

CPU	A	B	C	D
x 3.0	Short	Open	Short	Short
x 3.5	Open	Open	Short	Open
x 4.0	Short	Short	Open	Short
x 4.5	Open	Short	Open	Short
x 5.0	Short	Open	Open	Short
x 6.0	Short	Short	Short	Open

Intel CPU	Ratio	Bus Freq.
Pentium II-233	3.5 x	66MHz
Pentium II-266	4.0 x	66MHz
Pentium II-300	4.5 x	66MHz
Pentium II-333	5.0 x	66MHz
Pentium II-300	3.0 x	100MHz
Pentium II-350	3.5 x	100MHz
Pentium II-400	4.0 x	100MHz
Pentium II-450	4.5 x	100MHz
Celeron-266	4.0 x	66MHz
Celeron-300	4.5 x	66MHz

FAN1 CPU FAN POWER

Pin	Description
1	Ground
2	+12VDC
3	FAN Speed Sensor

FAN 2 System FAN POWER

Pin	Description
1	Ground
2	+12VDC
3	FAN Speed Sensor

IR Connector

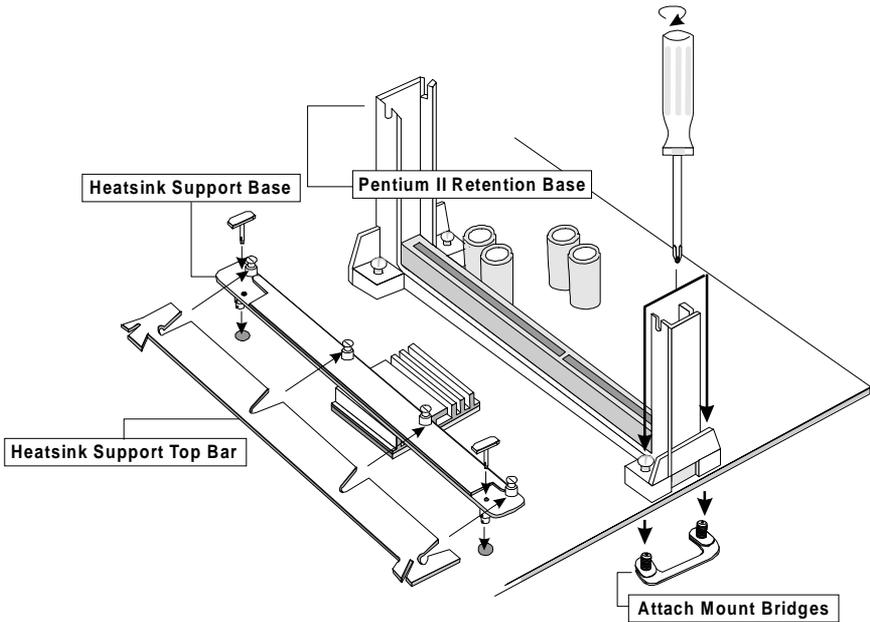
Pin	Description
1	VCC
2	N.C.
3	IRRX
4	Ground
5	IRTX
6	Fast IR

J4 SB-LINK™ Connector

J4 for Creative AWE64 PCI Sound Card

FDD1 Floppy Drive Connector**IDE1 Primary IDE Connector****IDE2 Secondary IDE Connector****RT1 Thermistor Connector**

2-5 Installing Pentium II Processor in Slot 1



1. Find the complementary indentation at the bottom of the Pentium II retention base and insert the Pentium II retention base onto Slot 1 accordingly.
2. Insert the attach mount bridges (For the remaining instructions) into the bottom of the mainboard with the curved edges facing outwards, toward the edge of the mainboard.
3. Use a screw driver to lightly tighten the retention base screws.
4. Insert the heatsink support base into the holes on either side of the 440BX PCIset located next to Slot 1. Note that one hole is bigger than the other to prevent backwards insertion.

5. Insert the heatsink support pins into the heat sink support base with the long axis of the pins parallel to the wide axis of the mainboard. The ends of the pins will protrude through the bottom of the heatsink support base when fully inserted.
6. Insert the Pentium II processor into the Pentium II retention base with the processor's heatsink fitting over the heatsink support base. Press evenly and gently until the snaps on the upper side of the processor have been inserted into the holes at the top of the retention base. Note that when removing the processor, these snaps can be clicked into a completely vertical position, leaving your hands free to stabilize the board and pull the processor evenly and gently out of the board. Also note that like PCI and ISA slots, Slot 1 has a divider that prevents backwards insertion.
7. Insert the heatsink support top bar into the heatsink support base in a horizontal fashion, allowing it to click in place. The heatsink support bar has no directionality (can be inserted with the top facing up or down).

Note:

Installing a heatsink and cooling fan is necessary for proper heat dissipation from your CPU. Failing to install these items may result in overheating and possible burn-out of your CPU.

2-6 Memory Installation

The mainboard lets you add up to 384MB of system memory via DIMM sockets on the mainboard. The mainboard supports the following memory configurations and DIMM socket consists of three 168-pin DIMM Modules.

BANK	MEMORY MODULE
DIMM 1	8MB, 16MB, 32MB, 64MB, 128MB 168PIN DIMM (Single Side, Double Side)
DIMM 2	8MB, 16MB, 32MB, 64MB, 128MB 168PIN DIMM (Single Side, Double Side)
DIMM 3	8MB, 16MB, 32MB, 64MB, 128MB 168PIN DIMM (Single Side, Double Side)

Notes:

DRAM type : 3.3V , 64/72-bit EDO DRAM(50/60ns) and SDRAM(8/10/12ns)



3

Chapter 3
AWARD BIOS Setup

**This chapter explains how to
configure the mainboard's
BIOS setup program.**

After you have configured the mainboard, and have assembled the components, you can turn on the completed system. At this point, run the software setup to ensure that the system information is correct.

The software setup of the system board is achieved through Basic Input-Output System (BIOS) programming. You use the BIOS setup program to tell the operating system what types of devices are connected to your system board.

The system setup is also called CMOS setup. Normally, you need to run system setup if either the hardware is not identical with information contained in the CMOS RAM, or if the CMOS RAM has lost power.

3-1 Award BIOS Setup

Enter the Award Setup program's Main Menu as follows:

1. Turn on or reboot the system. The following message appears at the bottom of the screen:
"Press to enter setup, ESC to skip memory test"
2. Press the key to enter the Award BIOS setup program and the following screen appears:

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

3. Choose an option and press <Enter>. Modify the system parameters to reflect the options installed in the system. (See the following sections for more information.)
4. Press <ESC> at anytime to return to the Main Menu.
5. In the Main Menu, choose "SAVE AND EXIT SETUP" or <F10> to save your changes and reboot the system.
Choosing "EXIT WITHOUT SAVING" or <ESC> ignores your changes and exits the program.

3-2 Main Menu Options

The Main Menu options of the Award BIOS are as below.

STANDARD CMOS SETUP

Run the Standard CMOS Setup as follows.

1. Choose "STANDARD CMOS SETUP" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS STANDARD CMOS SETUP AWARD SOFTWARE, INC.							
Date (mm:dd:yy) : Mon, APR 20 1998							
Time (hh:mm:ss) : 14 : 59 : 44							
HARDDISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR MODE
Primary Master:	Auto	0	0	0	0	0	Auto
Primary Slave:	Auto	0	0	0	0	0	Auto
Secondary Master:	Auto	0	0	0	0	0	Auto
Secondary Slave:	Auto	0	0	0	0	0	Auto
Drive A	: 1.44M, 3.5 in						
Drive B	: None						
Video	: EGA/VGA						
Halt On	: All, But Keyboard						
				Base Memory	:	640K	
				Extended Memory	:	97280K	
				Other Memory	:	384K	
				Total Memory	:	98304K	
Esc	:	Quit	←	→	↑	↓	Select Item
F10	:	Save & Exit Setup			PU/PD/+/-	:	Modify
					(Shift)F2	:	Change Color

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/- keys. Some fields let you enter numeric values directly.

Date (mm/dd/yy) Type the current date

Time (hh:mm:ss) Type the current time

Hard Disk Configurations

TYPE : Select from 1 to 45 to fill remaining fields with predefined values of disk drives. Select user to fill the remaining fields. Select auto to detect the HDD type automatically.

SIZE : The hard disk size. The unit is Mega Bytes.

CYLS : The Cylinder number of the hard disk.

HEAD : The read/write head number of hard disk.

PRECOMP : The cylinder number at which the disk drive changes the write timing.

LANDZ : Landing zone.

SECTOR : Number of sectors

MODE : Select auto to detect the mode type automatically. If your hard disk supports the LBA mode, select LBA or Large. However, if your hard disk cylinder is more than 1024 and does not support the LBA function, set at Large. Select Normal if your hard disk supporting cylinders is below 1024.

Drive A & B

Choose	360KB 5 1/4"	1.2MB 5 1/4"
	720KB 3 1/2"	1.44MB 3 1/2"
	Not installed	2.88MB 3 1/2"

Video

Choose	Monochrome	Color 40x25
	VGA/EGA	Color 80x25
	Not installed	

Halt On

Choose	All Errors (Default)	No Errors
	All, But Keyboard	All, But Diskette
	All, But Disk/Key	

Note :

You can select Auto under the TYPE and MODE fields. This will enable auto detection of your IDE drives during bootup.

3. After you have finished with the Standard CMOS Setup program, press the <ESC> key to return to the Main Menu.

BIOS FEATURES SETUP

Run the BIOS Features Setup as follows.

1. Choose "BIOS FEATURES SETUP" from the Main Menu and a screen with a list of items appears.
2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/- keys.

ROM PCI/ISA BIOS	
BIOS FEATURES SETUP	
AWARD SOFTWARE, INC.	
Virus Warning : Disabled	Video BIOS Shadow : Enabled
CPU Internal Cache : Enabled	C8000-CBFFF Shadow : Disabled
External Cache : Enabled	CC000-CFFFF Shadow : Disabled
CPU L2 Cache ECC Checking : Enabled	D0000-D3FFF Shadow : Disabled
Quick Power On Self Test : Enabled	D4000-D7FFF Shadow : Disabled
Boot Sequence : C,A,SCSI	D8000-DBFFF Shadow : Disabled
Swap Floppy Drive : Disabled	DC000-DFFFF Shadow : Disabled
Boot Up Floppy Seek : Enabled	
Boot Up NumLock Status : On	
Typematic Rate Setting : Disabled	
Typematic Rate (Chars/Sec) : 6	
Typematic Delay (Msec) : 250	
Security Option : Setup	
PCI/VGA Palette Snoop : Disabled	ESC : Quit ←→↑↓:Select Item
OS Select for DRAM >64MB : Non-OS2	F1 : Help PU/PD/+/- : Modify
Report no FDD for Win95: No	F5 : Old Values (Shift)F2 : Color
	F7 : Load Setup Defaults

Virus Warning

Choose Enabled or Disabled. Enable this option and a SYSTEM WARNING MESSAGE appears when the system detects a virus.

CPU Internal Cache

Choose Enabled or Disabled. This option lets you enable the CPU's internal cache memory.

External Cache

Choose Enabled or Disabled. This option lets you enable the external cache memory. For better performance, make sure you always choose "Enabled."

CPU L2 Cache ECC Checking

The defaults of item to check CPU L2 cache ECC function. If your Pentium II CPU's QDF/S-Spec. is **SL264, SL265, SL2HD,SL2HC SL28K, SL28L, SL2QA, SL2QB**, to set this field disabled. Otherwise leave this on the setup default setting of enabled.

Enabled : ECC

Disabled : Non-ECC

Quick Power On Self Test

Choose Enabled or Disabled. Enabled provides a fast POST and boot-up speed.

Boot Sequence

The default setting first to boot from drive C: You can reverse this sequence with "A:C:", will then drive A: boot directly.

Swap Floppy Driver

Choose Enabled or Disabled. When Enabled Floppy drives A & B are swapped under DOS.

Boot Up Floppy Seek

Choose "Enabled" or "Disabled". "Disabled" provides a fast boot and reduces the possibility of damage to the heads.

Boot Up Num Lock Status

Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts this keypad in arrow key mode at boot-up.

Typematic Rate Setting

This determines the typematic rate.

Enabled : Enable typematic rate and typematic delay programming.

Disabled : 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)

Choose the rate a character keeps repeating.

Typematic Delay (Msec)

Choose how long after you press a key that a character begins repeating.

Security Option

Choose Setup, or System. Use this feature to prevent unauthorized system boot-up or unauthorized use of BIOS Setup.

“**System**” - Each time the system boots the password prompt appears.

“**Setup**” - Password prompt only appears if you attempt to enter the Setup program.

PCI/VGA Palette Snoop

Some display cards that are nonstandard VGA such as graphics accelerators or MPEG Video Cards may not show colors properly. The setting Enabled should correct this problem. Otherwise leave this on the setup default setting of Disabled.

OS/2 Onboard Memory >64M

When using OS/2 operating systems with installed DRAM of greater than 64MB, you need to set this option to Enabled otherwise leave this on Disabled.

Video BIOS Shadow

Choose enabled(default) . let the VGA BIOS map to system RAM.

C8000-CBFFFF to DC000-DFFFF

These fields are used for shadowing others expansion card ROMs. If you install other expansion cards with ROMs on them, you will need to know which addresses the ROMs use to shadow them specifically. Shadowing a ROM reduces the memory available between 640KB and 1024KB by the amount used for this purpose.

3. After you have finished with the BIOS Features Setup program, press the <ESC> key and then follow screen instructions to save or disregard your settings.

CHIPSET FEATURES SETUP

The “CHIPSET FEATURES SETUP” is used to control the values of the chipset registers. These registers control most of the system options in the computer.

Run the Chipset Features Setup as follows:

1. Choose “CHIPSET FEATURES SETUP” from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.	
DRAM Speed Selection : 60ns	CPU Warning Temperature : 70°C/158°F
SDRAM CAS latency Time : 3	Current CPU Temperature : 19°C/66°F
DRAM Data Integrity Mode : Non-ECC	Current CPUFAN1 Speed : 35°C/95°F
	Current CPUFAN2 Speed : 3096 RPM
	Current CPU Voltage : 3.013 RPM
	Current 5V (V) : 5.07 V
System BIOS Cacheable : Disabled	Current 3.3V (V) : 3.30 V
Video BIOS Cacheable : Disabled	Current +12V (V) : 12.10 V
Video RAM Cacheable : Disabled	Current CPU Voltage : 1.99V
8 Bit I/O Recovery Time : 1	
16 Bit I/O Recovery Time : 1	
Memory Hole At 15Mb Addr. : Disabled	
AGP Aperture Size : 64M	
ESC : Quit ←→↑↓:Select Item	
F1 : Help PU/PD/+/- : Modify	
F5 : Old Values (Shift)F2 : Color	
F7 : Load Setup Defaults	

DRAM Speed Selection

The DRAM speed selection is controlled by the DRAM Timing Register
60ns : DRAM Timing (default)

SDRAM CAS Latency Time

The SDRAM Timing type : 2, 3 (Default)

DRAM Data Integrity Mode

These bits provide software configurability of selecting between ECC mode or non-ECC mode of operating of the DRAM interface following manner :
NON-ECC(default) : Byte-Wise Writes supported
ECC : Generation and Checking / Correction.

System BIOS Cacheable

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

Video BIOS Cacheable

When enabled, access to video BIOS addressed at C0000H to C7FFFH are cached, provided that the cache controller is enabled.

Video RAM Cacheable

Choose enabled or disabled (default).

When enabled, the access to the VGA RAM addressed is cached.

8 Bit I/O Recovery Time

The timing for 8-bit ISA card.

16 Bit I/O Recovery Time

The timing for 16-bit ISA cards

Memory Hole at 15M-16M

In order to improve performance, certain space in memory can be reserved for ISA cards. This field allows you to reserve 15MB to 16MB memory address space to ISA expansion cards. This makes memory from 15MB and up unavailable to the system. Expansion cards can only access memory up to 16MB. By default, this field is set to Disabled.

AGP Aperture Size (MB)

Memory-mapped, graphics data structures can reside in a graphics aperture. The AGP Aperture Size register allows the selection of an aperture size of 4MB, 8MB, 16MB, 32MB, 64MB, 128MB and 256MB.

CPU Warning Temperature

When CPU temperature is over the setting value, the speaker will sound an alarm and the clock will drop until the temperature is within optimum the temperature range.

2. The items are optimal setting for this mainboard, you should not change them unless you are familiar with the chipset.

POWER MANAGEMENT SETUP

The Power Management controls the mainboard's "green" features that for the power saving Mode, Display turn off and HDD power down that together form the hardware power conservation scheme.

Run the Power Management Setup as follows:

1. Choose "POWER MANAGEMENT SETUP" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.		
Power Management	: User Define	** Reload Global Timer Events**
PM Control by APM	: Yes	IRQ3 (3-7, 9-15), NMI : Enabled
Video Off Method	: V/H SYNC+Blank	Primary IDE 0 : Disabled
Video Off After	: Standby	Primary IDE 1 : Disabled
MODEM Use IRQ	: 3	Secondary IDE 0 : Disabled
Doze Mode	: Disable	Secondary IDE 0 : Disabled
Standby Mode	: Disable	Floppy Disk : Disabled
Suspend Mode	: Disable	Serial Port : Enabled
HDD Power Down	: Disable	Parallel Port : Disabled
Throttle Duty Cycle	: 62.5%	
VGA Active Monitor	: Disabled	
Soft-Off by PWR-BTTN	: Delay 4 Sec.	
CPUFAN Off In Suspend	: Enabled	
Resume by Ring	: Enabled	
Resume by Alarm	: Disabled	
IRQ 8 Break Suspend	: Disabled	
		ESC : Quit ←→↑↓: Select Item
		F1 : Help PU/PD/+/- : Modify
		F5 : Old Values (Shift)F2 : Color
		F7 : Load Setup Defaults

2. A short description of the screen items follows:
"POWER MANAGEMENT" is the master control for the four power saving modes, doze, standby, suspend mode and HDD power down mode..

Power Management :User Define

Disabled : The system operates in NORMAL conditions (Non-GREEN), and the Power Management function is disabled.

Max.saving : This mode will maximize the power saving capability.

Min.saving : This mode will minimize the power saving capability.

User define : Allow user to define time out parameters to control power saving timing. Refer to item B shown below.

PM Control by APM

The option "No" allows the BIOS to ignore the APM (Advanced Power Management) specification. Selecting "Yes" will allow the BIOS wait for APM's prompt before it enters Doze mode, Standby mode, or Suspend mode. If the APM is installed, it will prompt the BIOS to set the system into the power saving mode after all tasks are done.

Video Off Method

The option "V/H SYNC+Blank" allows the BIOS to blank off screen display by turning off the V-Sync signals sent from add-on VGA card. "DPMS Supported" allows the BIOS to blank off screen display by your add-on VGA card which supports DPMS (Display Power Management Signaling Function.) "Blank Screen" allows the BIOS to blank screen display by turning off the red-green-blue signals.

MODEM use IRQ

When the system is in green function, modem wakes up the system through IRQ.

Doze Mode

When disabled, the system will not enter Doze mode. The specified time option defines the idle time the system takes before it enters Doze mode.

Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode.

HDD Power Down

Selecting Disabled "will turn off the hard disk drive (HDD) motor. Selecting "1 Min..15Min" allows you to define the HDD idle time before the HDD enters Power Saving Mode. The option "When Suspend" lets the BIOS turns the HDD motor off when the system is in Suspend mode.

The options "1Min..15Min" and "When Suspend" will not work concurrently. When HDD is in Power Saving Mode, any access to the HDD will wake the HDD up.

Throttle duty Cycle

Choose the duty cycle time : 12.5%, 25%, 37.5%, 50%, 62.5%(default), 75%, or 87.5%. The bigger of the percentage, the more saving power it gets.

VGA Active Monitor

Enabled : the system can not enter the power saving mode when monitor is on.

Disabled : the system can enter the power saving mode when monitor is on.

Soft-Off by PWRBTN

When enabled, turning the system off with the on/off button places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity.

Resume by Ring

Enabled : Wake up the system from ring signal.

Disabled : (default) Ring signal can not wake up the system.

PNP/PCI SLOT CONFIGURATION

The "PNP/PCI SLOT CONFIGURATION" sets the system for use with PCI bus cards.

Run the PNP/PCI Slot Configuration program as follows.

1. Choose "PNP/PCI CONFIGURATION" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS PNP/PCI CONFIGURATION AWARD SOFTWARE, INC.	
PNP OS Installed : Yes	
Resources controlled by : Auto	
Reset configuration Data : Disabled	
ESC : Quit ←→↑↓:Select Item F1 : Help PU/PD+/- : Modify F5 : Old Values (Shift)F2 : Color F7 : Load Setup Defaults	

2. Explained below:

PNP OS Installed

If your operating system is a Plug-and-Play one, such as Windows NT, Windows 95, select Yes. The options are : No (Default), Yes.

Resource Controlled By

Manual : The field defines that the PNP Card's resource is controlled by manual. You can set which IRQ-X and DMA-X assigned to PCI/ISA PNP or Legacy ISA cards.

Auto : If your ISA card and PCI card are all PNP cards. To set this field Auto.
The BIOS will be assigned the interrupt resource automatically.

Reset Configuration Data

Disabled : Normal Setting

Enabled : If you had plugged some Legacy cards in the system and there were records into ESCD (Extended System Configuration Data). You can set this field to Enabled and to clear ESCD one time . When some Legacy cards were removed.

4. After you have finished with the PCI Slot Configuration program, press the <ESC> key and then follow screen instructions to save or disregard your settings.

LOAD SETUP DEFAULTS

This Main Menu item loads the default system values. These settings are recommended for optimum performance. If the CMOS is corrupted when enter BIOS setup utility you must load setup default again. Choose this item and the following message appears:

"Load SETUP Defaults (Y/N)? Y"

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

INTEGRATED PERIPHERALS SETUP

The "INTEGRATED PERIPHERALS" is used to control the values of the I/O chipset registers. These registers control the mode of HDD type and I/O address port.

Run the *Integrated Peripherals* as follows:

1. Choose "INTEGRATED PERIPHERALS" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.	
IDE HDD Block Mode : Enabled	UART Mode Select : Normal
IDE Primary Master PIO : Auto	Onboard Parallel Port : 378/IRQ7
IDE Primary Slave PIO : Auto	Parallel Port Mode : SPP
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 Keyboard Support : Disabled	
Init AGP Display First : Disabled	
KBC input clock : 8 Mhz	
Onboard FDC Controller : Enabled	ESC : Quit ←→↑↓:Select Item
Onboard Serial Port 1 : 3F8/IRQ4	F1 : Help PU/PD/-/ : Modify
Onboard Serial Port 2 : 2F8/IRQ3	F5 : Old Values (Shift)F2 : Color
	ESC : Quit ←→↑↓:Select Item

Note:

If you don't use the Onboard IDE connector, than use On-card (PCI or ISA card) IDE connector, you will set Onboard Primary PCI IDE : Disabled and Onboard Secondary PCI IDE : Disabled from CHIPSETFEATURES SETUP UTILITY.

The Onboard PCI IDE cable should be equal to or less than 18 inches (45cm).

IDE HDD Block Mode:

The default value is Enabled.

Enabled : Enabled IDE HDD Block Mode. The HDD transfer rate is better than Disable.

Disabled : Disable IDE HDD Block Mode.

IDE Primary Master PIO /IDE Primary Slave PIO

The default value is Auto.

Auto : BIOS will automatically detect the Onboard PCI IDE HDD Accessing mode.

Mode0-4 : Manually set the IDE Accessing mode.

IDE Secondary Master PIO /IDE Secondary Slave PIO

The default value is Auto.

Auto : BIOS will automatically detect the Onboard PCI IDE HDD Accessing mode.

Mode0-4 : Manually set the IDE Accessing mode.

IDE Primary Master UDMA/IDE Primary Slave UDMA

Allows you to select the first PCI IDE channel of the first master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

IDE Secondary Master UDMA/IDE Secondary Slave UDMA

Allows you to select the second PCI IDE channel of the secondary master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

On-Chip Primary/Secondary PCI IDE

Turn on(enable)/Turn off(disable) the onboard IDE function.

USB Keyboard Support

Enable : USB keyboard. Disable : AT keyboard.

Onboard FDC Controller

Choose disabled when you use an ISA card with FDD function, or choose enabled to use the onboard FDD connector.

Onboard Parallel Port

Select from a given set of parameters if the parallel port uses the onboard I/O controller.

The options are : 278/IRQ5 , 3BC/IRQ7 , 378/IRQ7(Default).

Parallel Port Mode

Allows you to connect with an advanced printer. Select SPP for standard parallel port (SPP) used on IBM PC/XT, PC/AT and bi-directional parallel port found on PS/2 system.

Select ECP Mode for Microsoft and HP Extended Capabilities Parallel Port. Select ECP+EPP Mode for both ECP and EPP Modes ports.

The options are SPP (Default), EPP+SPP Mode, ECP Mode, ECP+EPP Mode.

USER PASSWORD SETTING

This Main Menu item lets you configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program. The password cannot be longer than 8 characters. If CMOS is corrupted or the option was not used, a default password stored in the ROM will be used. The screen will display the following message:

Enter Password :

IDE HDD AUTO DETECTION

1. If your system has an IDE hard drive, you can use this utility to detect its parameters and automatically enter them into the Standard CMOS Setup.
2. For IDE hard disk driver, the BIOS provide three modes to support both normal IDE hard disk and also drives large than 528MB, a short description of three modes as follows:
 - a. Normal mode: For drives small than 528MB
 - b. Large Mode: For drives larger than 528MB that do not use LBA. There can only be used with MS-Dos operating system.
 - c. LBA mode: For drives larger than 528MB and up to 8.4GB that use logic block addressing mode. Normally we recommend to select LBA Mode if your HDD drivers large than 528MB.
3. This utility will auto detect as many as four IDE drivers.

SAVE & EXIT SETUP

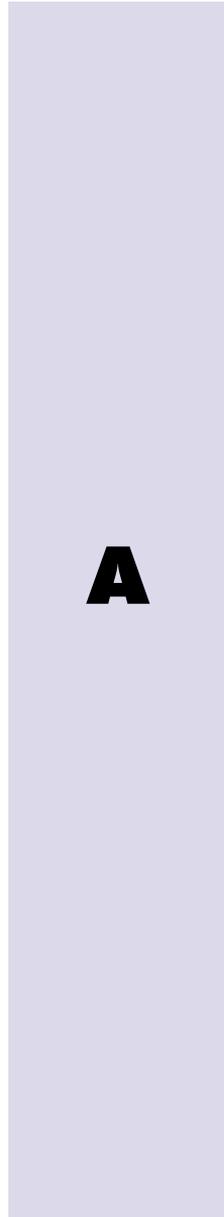
After you have made changes under Setup, press "Esc" to return to the main menu. Move cursor to "Save and Exit Setup" or press "F10" and then press "Y" to change the CMOS Setup. If you did not change anything, press "Esc" again or move cursor to Exit Without Saving and press "Y" to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility.

Save to CMOS and EXIT (Y/N)?

EXIT WITHOUT SAVING

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications

Quit Without Saving (Y/N)?



Appendix
Hardware Mointor Setup/
AGP Utility

**This chapter explains how to
configure the mainboard's
hardware mointor setup
program and AGP utility.**



A-1 System Health Monitor Utility

Gateway Logic System Health Center v1.8

Manufacturer: Gateway Logic System Monitor

Poling Interval: 4 Seconds

Update with Save
Update and Save
Save Setting
Default Setting
Quit
Hide

CPU Temperatures

Warning When Over: 58
Stop/Warning When Under: 50
Current Temperature: 29

Celsius
 Fahrenheit

Environment Temperature

Warning When Over: 50
Stop/Warning When Under: 45
Current Temperature: 31

Minimize when Startup

Voltage (V)

	High/Limit	Low/Limit	Current Voltage
3.3V Values	3.45	3.13	3.28
12V Values	12.68	11.83	12.17
5V Values	5.25	4.75	5.00
VCase Values	2.70	1.58	1.95

Fan (RPM)

	Low Limit	Current Speed
CPU Fan Speed	2000	4785
System Fan Speed	1000	4080

Warning when

CPU Over Heat
 Environment Over Heat
 CPU Abnormal
 12V Abnormal
 5V Abnormal
 VCase Abnormal
 CPU Fan Abnormal
 System Fan Abnormal

Annotations:

- Sets the time interval for monitoring the system (Poling Interval)
- Sets the range of the processor's temperature (Warning/Stop/Current Temperature)
- Current temperature of the processor (Current Temperature)
- Sets the range of each voltage (High/Limit, Low/Limit)
- Current value of each voltage (Current Voltage)
- When enabled, this screen will minimize and display a histogram icon after boot-up (Minimize when Startup)
- These items, when enabled, will alert you in case of failure (Warning when checkboxes)
- Current speed of the CPU/chassis fan's speed (Current Speed)
- Selects the temperature scale (Celsius/Fahrenheit)

The system board comes with a System Health Monitor utility contained in the provided CD/diskette. This utility shows the current temperature of the processor, power voltages, and processor/chassis fan speed.

The utility also allows you to manually set the range of the processors temperature, power voltages, and processor/chassis fan speed. If the settings/values are over or under the set range, an error message will pop-up and an alarm will sound. There are three types of sound for the three different failure alarms (temperature, voltage and fan). Refer to the Chipset Features Setup (Chapter 3) section for details.

When you hear a failure alarm, you must power off your computer and check the following: processor fan/heatsink, chassis fan and power supply. We recommend that you use the "Default Setting" which is the ideal setting that would keep the system in good working condition.

**Important:**

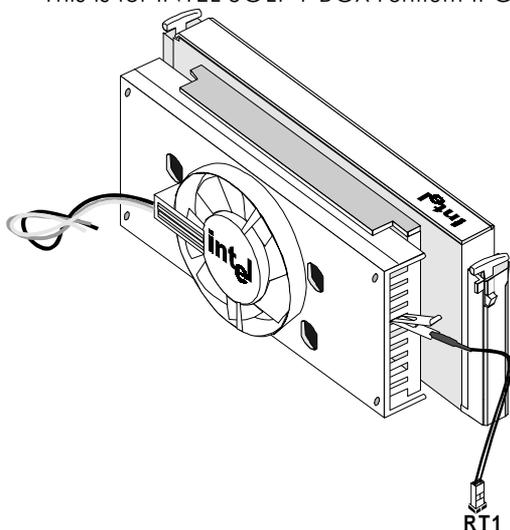
Once this utility is installed, the system will ignore the settings in the "System Health Monitor" field of the Chipset Features Setup. If you are using Windows[®] 95 or Windows NT[®] 4.0, you may select between using the utility and the Chipset Features Setup. For other operating systems, you may only use the Chipset Features Setup.

A-2 Installing the Utility

Insert the CD/diskette that came with the system board. Run SETUP.EXE of the System Health Monitor utility. After completing installation, you will find this utility in "StartUp" under "Programs" of Windows[®] 95 / NT 4.0. Please refer to the "Readme" file for details on using the utility.

A-3 Application

This is for INTEL SOLT 1 BOX Pentium II CPU temperature sensing.





A-4 AGP and BX Chip Utility

Microsoft 95 system not support the AGP controller by Intel 440BX. Please install winp2x4.exe to upgrade inf file under Win95 DOS prompt.

1. Start Win95.
2. Run MS-DOS prompt.
3. Insert CD/diskette , run winp2x4.exe.

