
AI6NE
Pentium II 440LX/440EX
Baby AT Motherboard
User's Manual
Version 1.0

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Chapter 1 Introduction

This manual is designed to give you information on the AI6NE motherboard. It is divided into the following sections:

- ǒ **Introduction**
- ǒ **Specifications**
- ǒ **Hardware Description**
- ǒ **Configuring the Motherboard**
- ǒ **Installation**
- ǒ **BIOS and System Setup**
- ǒ **System Monitor Utility**

Checklist

Please check that your package is complete and contains the items below. If you discover damaged or missing items, please contact your dealer.

- ⇒ The AI6NE Motherboard
- ⇒ 1 IDE ribbon cable
- ⇒ 1 floppy ribbon cable
- ⇒ 2 serial ribbon cables*
- ⇒ 1 parallel ribbon cable
- ⇒ 1 CD containing Intel LANDesk Client Manager or System Monitor software, PIIX4 Bus Master IDE driver and utilities. Your package comes with Intel's LANDesk or System Monitor software if your motherboard supports the onboard hardware monitoring IC.

** Use the two serial cables supplied to avoid possible compatibility problems.*

Chapter 2 Specifications

The AI6NE is a high-performance Baby AT 440LX / 440EX motherboard with a Slot 1 CPU socket for Pentium II processors. It offers flexibility in terms of CPU frequency and main memory type and size. The main features of the motherboard consist of the following:

CPU Socket

Slot 1

Processor

Intel Pentium II 233/266/300/333MHz

L2 Cache

CPU integrated L2 cache

CPU Voltage

Switching voltage regulator on board supporting multiple voltage ranging 1.8V-3.5V

Main Memory

Two 168-pin DIMM sockets

Memory types: Extended Data Output (EDO) DRAM, SDRAM (Synchronous DRAM)

Chipset

Intel 82440LX / 82440EX with built-in PCI-IDE

BIOS

Award BIOS with ISA Plug and Play (PnP) extension, DMI, and power-management features

Power Connector

ATX and AT power supply connector

PCI Bus Master IDE Controller (Ultra DMA/33)

Onboard PCI Bus Master IDE (Ultra DMA/33) controller with two connectors for up to four IDE devices in two channels, supporting faster data transfer rates, enhanced IDE devices such as Tape Backup and CD-ROM drives, PIO Mode 3/4 and Bus Master Ultra DMA/33

Super I/O

Onboard super I/O is a ALI M5135 that provides:

- Two 16550 UART compatible serial ports
- One parallel port (ECP/EPP compatible)
- One floppy controller (2.88MB compatible)
- One IrDA port
- Keyboard controller

Mouse Connector

PS/2 type, 5-pin header

Keyboard Connector

AT type

USB Connector

Headers

Win95-shut-off (ATX power supply only)

Allows shut-off control from within Windows 95

Modem-ring-on (ATX power supply only)

Supports modem-ring-on capability through an external modem connected to COM1 or COM2.

Year 2000 Compliant BIOS

The onboard Award BIOS is Year 2000 Compliant and will pass software applications that have the tendency to invoke INT1AH function 04H such as year2000.exe utility released by NSTL.

DMI BIOS Support

Desktop Management Interface (DMI) allows users to download system hardware-level information such as CPU type, CPU speed, internal/external frequencies and memory size.

AGP (Accelerated Graphics Port)

AGP is a platform bus specification that enables 3D graphics capabilities including support for z-buffering, alpha blending and faster texture mapping. The onboard AGP port of the AI6NE supports AGP VGA cards.

Expansion Slots

Three PCI 32-bit slots
Two ISA 16-bit slots
One AGP slot

Form Factor

Baby AT, 8.6" x 8.6" (22cm x 22cm)

Chapter 3 Hardware Description

This chapter briefly describes each of the major features of the AI6NE motherboard. The layout of the board in Figure 1 shows the location of the key components. The topics covered in this chapter are as follows:

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3.3 Main Memory.....	6
3.4 BIOS.....	6
3.5 I/O Port Address Map.....	7
3.6 DMA Channels.....	7
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3.8 Onboard PCI-IDE.....	8
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3.10 Onboard AGP Port.....	9

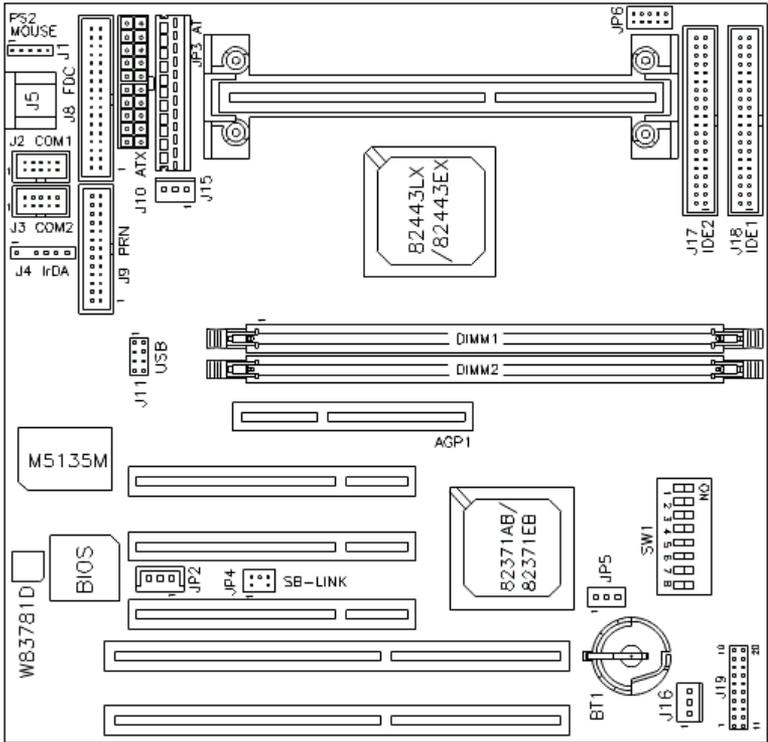


Figure 1: Layout of the AI6NE Motherboard

3.1 Processor

The AI6NE motherboard is designed to take a Pentium II processor running 233/266/300/333MHz with its Slot 1 processor connector.

3.2 L2 Cache

The L2 cache is integrated in the Pentium II processor. The private L2 cache bus is not connected to package pins, rather its signals are routed between the two cavities using standard package techniques. The high-performance bandwidth is used by the CPU to serve all L1 cache misses, the characteristic of a CPU-cache bus.

3.3 Main Memory

The AI6NE motherboard supports Two 168-pin DIMM (Dual In-line Memory Module) sockets to accommodate DIMM modules (8MB, 16MB, 32MB, 64MB and 128MB) in SDRAM or EDO DRAM type. In populating the DIMM sockets, DIMM1 and DIMM2 bank can be populated first. Refer to the following table on how to configure the memory.

Bank0 (DIMM1)	Bank1 (DIMM2)	Total Memory
8MB	----	8MB
16MB	----	16MB
32MB	----	32MB
64MB	----	64MB
128MB	----	128MB
8MB	8MB	16MB
16MB	8MB	24MB
32MB	8MB	40MB
64MB	8MB	72MB
128MB	8MB	136MB
16MB	16MB	32MB
32MB	16MB	48MB
64MB	16MB	80MB
128MB	16MB	144MB
32MB	32MB	64MB
64MB	32MB	96MB
128MB	32MB	160MB
64MB	64MB	128MB
128MB	64MB	192MB
128MB	128MB	256MB

3.4 BIOS

The BIOS on the AI6NE motherboard provides the standard BIOS functions plus the following additional features:

1. ISA Plug and Play (PnP) Extension

Unlike PCI cards that are Plug and Play, ISA cards require setting jumpers to resolve hardware conflicts. To make a computer system PnP, an ISA PnP standard is established and supported by new operating systems, such as Windows 95. Under Windows 95, the motherboard BIOS must have an ISA PnP extension to support new ISA PnP cards.

2. Power Management

The power management feature provides power savings by slowing down the CPU clock, turning off the monitor screen and stopping the HDD spindle motor. The BIOS fully conforms to APM 1.2 specifications.

3.5 I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. There is a total of 1K port address space available. The following table lists the I/O port addresses used on the motherboard.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock,, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
2F8h - 2FFh	Serial Port #2(COM2)
378h - 3FFh	Parallel Port #1(LPT1)
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

3.6 DMA Channels

There are seven DMA channels available on the motherboard. Only DMA2 is used by the floppy controller. In the case that ECP mode on the parallel port is utilized, DMA1 or DMA3 will be used.

3.7 Interrupt Request (IRQ) Lines

There is a total of 15 IRQ lines available on the motherboard. Peripheral devices use an interrupt request to notify the CPU for the service required. The following table shows the IRQ lines used by the devices on the motherboard:

<u>Level</u>	<u>Function</u>
<u>IRQ0</u>	<u>System Timer Output</u>
<u>IRQ1</u>	<u>Keyboard</u>
<u>IRQ2</u>	<u>Interrupt Cascade</u>
<u>IRQ8</u>	<u>Real Time Clock</u>
<u>IRQ9</u>	<u>Software Redirected to Int 0Ah</u>
<u>IRQ10</u>	<u>Reserved</u>
<u>IRQ11</u>	<u>Reserved</u>
<u>IRQ12</u>	<u>Reserved</u>
<u>IRQ13</u>	<u>Co-Processor</u>
<u>IRQ14</u>	<u>Primary IDE</u>
<u>IRQ15</u>	<u>Secondary IDE</u>
<u>IRQ3</u>	<u>INTERRUPT</u>
<u>IRQ4</u>	<u>Serial Port #1</u>
<u>IRQ5</u>	<u>INTERRUPT</u>
<u>IRQ6</u>	<u>Floppy Disk Controller</u>
<u>IRQ7</u>	<u>Parallel Port #1</u>

3.8 Onboard PCI-IDE

The PCI-IDE controller is a part of the 82440LX / 82440EX AGPset. It supports PIO mode 3/4 and bus mastering Ultra DMA/33. The peak transfer rate of PIO mode 3/4 can be as high as 17MB/sec. Using HDDs that support Ultra DMA/33, the peak transfer rate can reach 33MB/sec. There are two IDE connectors - primary IDE and secondary IDE. With two devices per connector, up to four IDE devices can be supported.

3.9 Onboard Multi-I/O

The onboard multi-I/O chip, ALI M5135, supports a keyboard controller, two serial ports, one parallel port, one floppy controller and one IrDA port. The serial ports are 16550 UART compatible. The parallel port supports high-speed EPP/ECP mode. The floppy controller supports up to 2.88MB format.

3.10 Onboard AGP Port

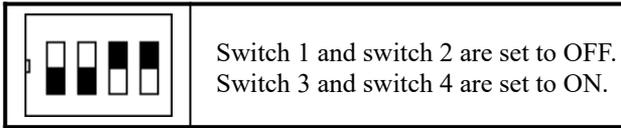
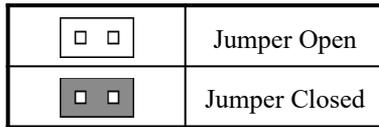
The onboard AGP port supports AGP (Accelerated Graphics Port) VGA cards. AGP is a platform bus specification that enables 3D graphics capabilities including support for z-buffering, alpha blending and faster texture mapping.

Chapter 4 Configuring the Motherboard

The following sections describe the necessary procedures and proper jumper settings to configure the AI6NE motherboard. For the locations of the jumpers, refer to Figure 2.

- 4.1 CPU Frequency: SW1..... 12
- 4.2 Clear CMOS Selection: JP5..... 12

The following examples show the conventions used in this chapter.



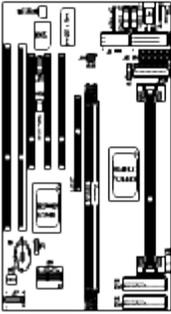


Figure 2: Jumper Location on the AI6NE

4.1 CPU Frequency: SW1

Refer to the following table for the correct setting to match the CPU frequency.

CPU Type	CPU Frequency	SW1(1-8)
Klamath/ Celeron 66MHz Host Clock CPU	3.5 x 66MHz 233MHz	<p>off off off off on off off on</p>
	4 x 66MHz 266MHz	<p>off off off off on on on</p>
	4.5 x 66MHz 300MHz	<p>off off off off on off on</p>
Deschutes 66MHz Host Clock CPU	5x 66MHz 333MHz	<p>off off off off off off on on</p>

4.2 Clear CMOS Selection: JP5

Use JP5, a 3-pin header, to clear the contents of the CMOS RAM. Do not clear the CMOS RAM unless it is absolutely necessary. You will lose your password, etc.

JP5	Function
<p>1 2 3</p>	Normal
<p>1 2 3</p>	Clear CMOS

NOTE: To clear CMOS, the ATX-power connector should be disconnected from the motherboard.

Chapter 5 Installation

This chapter describes the interface that the AI6NE provides for creating a working system. Refer to Figure 3 for the location of the connectors.

The following items are covered in this chapter:

5.1	I/O Connectors.....	15
5.2	J5, J1: AT Keyboard and PS/2 Mouse Connector.....	15
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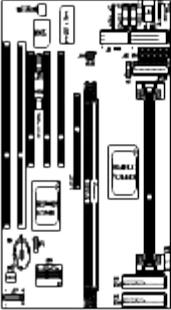


Figure 3: Connector Location on the AI6NE

5.1 I/O Connectors

The I/O connectors connect the AI6NE to the most common peripherals. To attach cables to these connectors, carefully align Pin 1 of the cables to that of the connectors. Refer to Figure 4 for the location and orientation of the connectors.

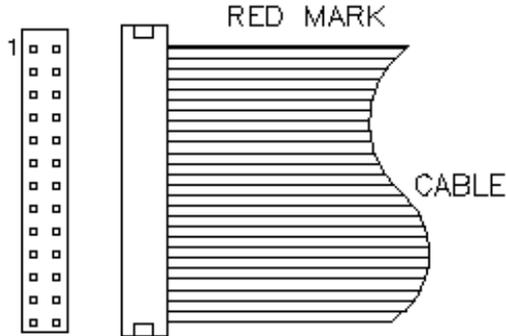
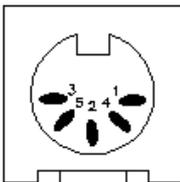


Figure 4: Orientation of the I/O Connector

5.2 J5, J1: AT Keyboard and PS/2 Mouse Connector

J5: AT Keyboard Connector



J5 Pin #	Signal Name
1	Keyboard data
2	N.C.
3	GND
4	5V
5	Keyboard clock
6	N.C.

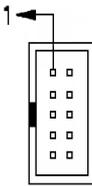
J1: PS/2 Mouse Connector



J1 Pin #	Signal Name
1	Mouse data
2	N.C.
3	GND
4	5V
5	Mouse Clock

5.3 J3, J2: Serial Ports

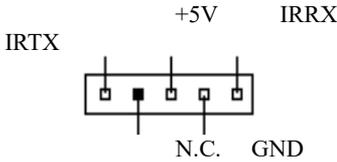
The onboard serial ports of the AI6NE are 10 pin-header connectors. J3 is COM1 and J2 is COM2. The following table shows the pin out of these connectors.



Pin #	Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator
10	Not Used

5.4 J4: IrDA Connector

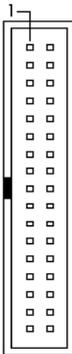
This connector is used for an IrDA connector that supports infrared wireless communication.



J4 Pin #	Signal Name
1	+5V
2	No connect
3	Ir RX
4	Ground
5	Ir TX

5.5 J8: Floppy Drive Connector

J8 is a 34-pin header and will support up to 2.88MB floppy drives.

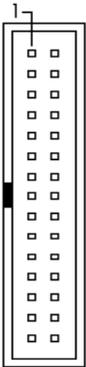


Signal Name	Pin #	Pin #	Signal Name
Ground	1	2	RM/LC
Ground	3	4	No connect
Ground	5	6	No connect
Ground	7	8	Index
Ground	9	10	Motor enable 0
Ground	11	12	Drive select 1
Ground	13	14	Drive select 0
Ground	15	16	Motor enable 1
Ground	17	18	Direction
Ground	19	20	Step
Ground	21	22	Write data
Ground	23	24	Write gate
Ground	25	26	Track 00

Ground	27	28	Write protect
Ground	29	30	Read data
Ground	31	32	Side 1 select
Ground	33	34	Diskette change

5.6 J9: Parallel Port Connector

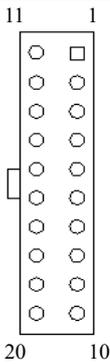
The following table describes the pin out assignments of this connector.



Signal Name	Pin #	Pin #	Signal Name
Line printer strobe	1	14	AutoFeed
PD0, parallel data 0	2	15	Error
PD1, parallel data 1	3	16	Initialize
PD2, parallel data 2	4	17	Select
PD3, parallel data 3	5	18	Ground
PD4, parallel data 4	6	19	Ground
PD5, parallel data 5	7	20	Ground
PD6, parallel data 6	8	21	Ground
PD7, parallel data 7	9	22	Ground
ACK, acknowledge	10	23	Ground
Busy	11	24	Ground
Paper empty	12	25	Ground
Select	13	N/A	N/A

5.7 J10: ATX Power Supply Connector

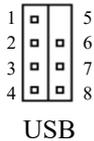
J10 is a 20-pin ATX power supply connector. Refer to the following table for the pin out assignments.



Signal Name	Pin #	Pin #	Signal Name
3.3V	11	1	3.3V
-12V	12	2	3.3V
Ground	13	3	Ground
PS-ON	14	4	+5V
Ground	15	5	Ground
Ground	16	6	+5V
Ground	17	7	Ground
-5V	18	8	Power good
+5V	19	9	5VSB
+5V	20	10	+12V

5.8 J11: USB Connectors

J11 is the USB connector on the motherboard. The following table shows the pin out assignments of the connector.

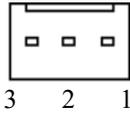


USB

J11 Pin #		Signal Name
1	5	Vcc
2	6	USB-
3	7	USB+
4	8	Ground

5.9 J15: CPU Fan Power Connector

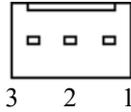
J15 is a 3-pin header for the CPU fan power connector. The fan must be a 12V fan.



J15 Pin #	Signal Name
1	Ground
2	+12V
3	Rotation

5.10 J16: Chassis Fan Power Connector

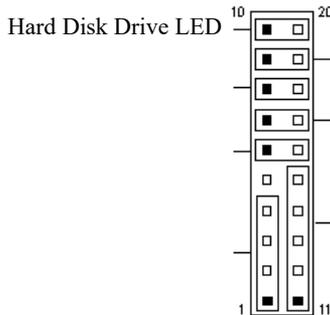
J16 is a 3-pin header for the chassis fan. The fan must be a 12V fan.



J16 Pin #	Signal Name
1	Ground
2	+12V
3	Rotation

5.11 J19: Front Bezel Connector

The front bezel of the case has a control panel which provides light indication of the computer activities and switches to change the computer status. J19 is a 20-pin header that provides interfaces for the following functions.



Turbo LED Connector

SMI / Hardware Switch

Speaker

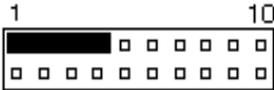
Reset Switch

ATX Power On Switch

Power LED and Keylock

Speaker: Pins 1 - 4

This connector provides an interface to a speaker for audio tone generation. An 8-ohm speaker is recommended.



J19 Pin #	Signal Name
1	Speaker out
2	No connect
3	Ground
4	+5V

Power LED and Keylock: Pins 11 - 15

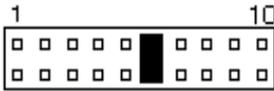
The power LED indicates the status of the main power switch. The keylock switch, when closed, will disable the keyboard function.



J19 Pin #	Signal Name
11	Power LED
12	No connect
13	Ground
14	Keylock
15	Ground

SMI/Hardware Switch: Pins 6 and 16

This connector supports the "Green Switch" on the control panel, which, when pressed, will force the system board into the power-saving mode immediately.



J19 Pin #	Signal Name
6	Sleep
16	Ground

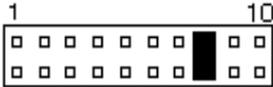
ATX Power ON Switch: Pins 7 and 17

This 2-pin connector is an "ATX Power Supply On/Off Switch" on the motherboard that connects to the power switch on the case. When pressed, the power switch will force the motherboard to power on. When pressed again, it will force the motherboard to power off.



Turbo LED Connector: Pins 8 and 18

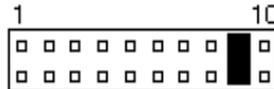
There is no turbo/deturbo function on the motherboard. The Turbo LED on the control panel will always be On when attached to this connector.



J19 Pin #	Signal Name
8	5V
18	Ground

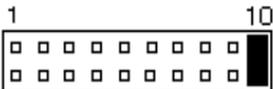
Reset Switch: Pins 9 and 19

The reset switch allows the user to reset the system without turning the main power switch Off and then On. Orientation is not required when making a connection to this header.



Hard Disk Drive LED Connector: Pins 10 and 20

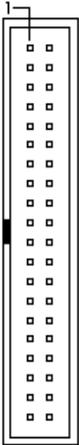
This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.



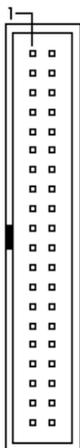
J19 Pin #	Signal Name
10	Ground
20	5V

5.12 IDE1, IDE2: EIDE Connectors

IDE1: Primary IDE Connector



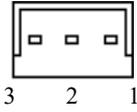
Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK0	29	30	Ground
IRQ14	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

IDE2: Secondary IDE Connector

Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK1	29	30	Ground
MIRQ0	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

5.13 JP2: Wake on LAN Connector

JP2 is a 3-pin header for the Wake on LAN function on the motherboard. The following table shows the pin out assignments of this connector. Wake on LAN will function properly only with an ATX power supply with 5VSB that has 200mA.



JP2 Pin #	Signal Name
1	+5VSB
2	Ground
3	Wake on LAN

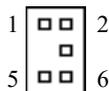
5.14 JP3: AT Power Supply Connector

When using an AT compatible power supply, plug both of the power supply connectors into JP3. Make sure the power supply connectors are connected in the right orientation. The power supply connectors are connected in the right orientation if the black wires of each power cable are ADJACENT to each other. That is, black wires of each connector should be aligned in the center of the JP3 power supply connector.

JP3 Pin #		Description	Wire Color
1		Power Good	Orange
2		+5V	Red
3		+12V	Yellow
4		-12V	Blue
5		Ground	Black
6		Ground	Black
7		Ground	Black
8		Ground	Black
9		-5V	White
10		+5V	Red
11		+5V	Red
12		+5V	Red

5.15 JP4: SB-Link Connector

The following table shows the pin out assignments of this connector. This connector is used for the Creative Sound AWE64D PCI sound card. The SB-Link uses Intel's PC-PCI technology to deliver (Creative's) Sound Blaster 16 compatibility to AWE64D, enabling users to play Real-mode DOS games.



JP4 Pin #	Signal Name
1	GNTA#

2	Ground
3	No Connect
4	REQA#
5	Ground
6	SERIRQ#

5.16 JP6: Battery Testing Connector

This connector is for testing purposes only. Please keep in open.

Chapter 6 BIOS and System Setup

This chapter describes the different settings available in the BIOS. The AI6NE motherboard comes with an Award BIOS. The topics covered in this chapter are as follows:

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	Typematic Rate Setting	
	Typematic Rate (Chars/Sec)	
	Typematic Delay (Msec)	
	Security Option	
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	Video BIOS Shadow	
	C8000 - CBFFF Shadow/DC000 - DFFFF Shadow	

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	CPU-To-PCI IDE Posting	
	System BIOS Cacheable	
	Video BIOS Cacheable	
	Video RAM Cacheable	
	8 Bit I/O Recovery Time	
	16 Bit I/O Recovery Time	
	Memory Hole at 15M-16M	
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6.1 BIOS Introduction

The Award BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel Pentium II processors. The BIOS provides critical low-level support for standard devices such as disk drives, serial and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

6.2 BIOS Setup

The Award BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the Award BIOS is immediately activated. Pressing the key immediately allows you to enter the Setup utility. If you are a little bit late pressing the key, POST(Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

```
Press <DEL> to Enter Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

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

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	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	

The section below the setup items of the Main Menu displays the control keys for this menu. Another section at the bottom of the Main Menu just below the control keys section displays information on the currently highlighted item in the list.

NOTE: After making and saving system changes with Setup, you find that your computer cannot boot, the Award BIOS supports an override to the CMOS settings that resets your system to its default.

We strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your system manufacturer to provide the absolute maximum performance and reliability.

6.3 Standard CMOS Setup

“Standard CMOS Setup” choice allows you to record some basic hardware configurations in your computer system and set the system clock and error handling. If the motherboard is already installed in a working system, you will not need to select this option. You will need to run the Standard CMOS option, however, if you change your system hardware configurations, the onboard battery fails, or the configuration stored in the CMOS memory was lost or damaged.

ROM PCI/ISA BIOS STANDARD CMOS SETUP AWARD SOFTWARE, INC.									
Date (mm:dd:yy) : Mon , Aug 19 1996									
Time (hh:mm:ss) : 00 : 00 : 00									
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE	
Primary Master	Auto	0	0	0	0	0	0	Auto	
Primary Slave	None	0	0	0	0	0	0	----	
Secondary Master	None	0	0	0	0	0	0	----	
Secondary Slave	None	0	0	0	0	0	0	----	
Drive A	: 1.44M, 3.5in				Base Memory		: 640K		
Drive B	: None				Extended		: 15360K		
Floppy 3 Mode Support				: Disabled		Memory			
Video	: EGA / VGA				Other Memory		: 384K		
Halt On	: All Errors				Total Memory		: 16384K		
ESC : Quit			↑ ↓ → ← : Select Item PU / PD / + / - : Modify						
F1 : Help			(Shift) F2 : Change Color						

At the bottom of the menu are the control keys for use on this menu. If you need any help in each item field, you can press the <F1> key. It will display the relevant information to help you. The memory display at the lower right-hand side of the menu is read-only. It will adjust automatically according to the memory changed. The following describes each item of this menu.

Date

The date format is:

- Day :** Sun to Sat
- Month :** 1 to 12
- Date :** 1 to 31
- Year :** 1994 to 2079

To set the date, highlight the “Date” field and use the PageUp/PageDown or +/- keys to set the current time.

Time

The time format is: **Hour : 00 to 23**
Minute : 00 to 59
Second : 00 to 59

To set the time, highlight the “Time” field and use the <PgUp>/ <PgDn> or +/- keys to set the current time.

Primary HDDs / Secondary HDDs

The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks; the first is the “Master” and the second is the “Slave”.

To enter the specifications for a hard disk drive, you must select first a “Type”. There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to 45 are predefined. Type “User” is user-definable. For the Primary Master/Slave as well as Secondary Master/Slave, you can select “Auto” under the TYPE and MODE fields. This will enable auto detection of your IDE drives and CD-ROM drive during POST.

Press <PgUp>/<PgDn> to select a numbered hard disk type or type the number and press the <Enter> key. The hard disk will not work properly if you enter incorrect information for this field. If your hard disk drive type is not matched or 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 to the following items.

CYLS : Number of cylinders
HEAD : Number of read/write heads
PRECOMP : Write precompensation
LANDZ : Landing zone
SECTOR : Number of sectors
SIZE : Automatically adjust according to the configuration
MODE (for IDE HDD only) : Auto
Normal (HD < 528MB)
Large (for MS-DOS only)
LBA (HD > 528MB and supports
Logical Block Addressing)

NOTE: The specifications of your drive must match with the drive table. The hard disk will not work properly if you enter incorrect information in these fields. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

Drive A / Drive B

These fields identify the types of floppy disk drive A or drive B that has been installed in the computer. The available specifications are:

360KB	1.	2MB	720KB	1.	44M	2.	88M
5.25 in.		5.25 in.	3.5 in.		B		B
					3.5 in.		3.5 in.

Floppy 3 Mode Support

This is the Japanese standard floppy drive. The standard stores 1.2MB in a 3.5-inch diskette. You have four options to choose:

Disabled	No 3 mode floppy drive installed. (default)
Drive A	Installed 3 mode drive at drive A.
Drive B	Installed 3 mode drive at drive B.
Both	Installed 3 mode drive at drive A and B.

Video

This field selects the type of video display card installed in your system. You can choose the following video display cards:

EGA/VGA	For EGA, VGA, SEGA, SVGA or PGA monitor adapters. (default)
CGA 40	Power up in 40 column mode.
CGA 80	Power up in 80 column mode.
MONO	For Hercules or MDA adapters.

Halt On

This field determines whether the system will halt if an error is detected during power up.

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

6.4 BIOS Features Setup

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

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
Quick Power On Self Test	: Enabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A, C, SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Drive	: Enabled	DC000-DFFF Shadow	: Disabled
Boot Up Numlock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PCI /VGA Palette Snoop	: Disabled		
OS Select For DRAM>64MB	: Non-OS2		
		ESC : Quit	↑ ↓ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify (Shift) F2 : Color
		F5 : Old Values	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Virus Warning

This item protects the boot sector and partition table of your hard disk against accidental modifications. If an attempt is made, the BIOS will halt the system and display a warning message. If this occurs, you can either allow the operation to continue or run an anti-virus program to locate and remove the problem.

NOTE: Many disk diagnostic programs which attempt to access the boot sector table can cause the virus warning. If you will run such a program, disable the Virus Warning feature.

CPU Internal Cache / External Cache

These items allow you to enable (speed up memory access) or disable the cache function. By default, these items are **Enabled**.

Quick Power On Self Test

This choice speeds up the Power On Self Test (POST) after you power up the system. If it is set to *Enabled*, BIOS will skip some items. By default, this choice is *Enabled*.

Boot Sequence

This field determines the drive that the system searches first for an operating system. The options are :

A, C, SCSI	D, A, SCSI	SCSI, C, A
C, A, SCSI	E, A, SCSI	C only
C, CDROM, A	F, A, SCSI	LS/ZIP, C
CDROM, C, A	SCSI, A, C	

The default value is *A, C, SCSI*.

Swap Floppy Drive

This item allows you to determine whether to enable Swap Floppy Drive or not. When enabled, the BIOS swaps floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A. By default, this field is set to *Disabled*.

Boot Up Floppy Seek

When enabled, the BIOS will seek whether or not the floppy drive installed has 40 or 80 tracks. 360K type has 40 tracks while 760K, 1.2M and 1.44M all have 80 tracks. By default, this field is set to *Enabled*.

Boot Up NumLock Status

This allows you to activate the NumLock function after you power up the system. By default, the system boots up with *NumLock On*.

Boot Up System Speed

This has no function and selects the default system speed (*High*).

Gate A20 Option

This field allows you to select how Gate A20 is worked. The Gate A20 is a device used to address memory above 1 MB. By default, this field is set to *Fast*.

Typematic Rate Setting

When disabled, continually holding down a key on your keyboard will generate only one instance. When enabled, you can set the two typematic controls listed next. By default, this field is set to *Disabled*.

Typematic Rate (Chars/Sec)

When the typematic rate is enabled, the system registers repeated keystrokes speeds. You can select speed range from 6 to 30 characters per second. By default, this item is set to **6**.

Typematic Delay (Msec)

When the typematic rate is enabled, this item allows you to set the time interval for displaying the first and second characters. By default, this item is set to *250msec*.

Security Option

This field allows you to limit access to the System and Setup. The default value is *Setup*. When you select *System*, the system prompts for the User Password every time you boot up. When you select *Setup*, the system always boots up and prompts for the Supervisor Password only when the Setup utility is called up.

PCI/VGA Palette Snoop

Some non-standard VGA display cards may not show colors properly. This field allows you to set whether MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. When this field is enabled, a PCI/VGA can work with a MPEG ISA/VESA VGA card. When this field is disabled, a PCI/VGA cannot work with a MPEG ISA/VESA Card.

OS Select for DRAM > 64MB

This option allows the system to access greater than 64MB of DRAM memory when used with OS/2 that depends on certain BIOS calls to access memory. The default setting is *NON-OS/2*.

Video BIOS Shadow

This item allows you to change the Video BIOS location from ROM to RAM. Video Shadow will increase the video speed.

C8000 - CBFFF Shadow/DC000 - DFFFF Shadow

Shadowing a ROM reduces the memory available between 640KB to 1024KB. These fields determine whether optional ROM will be copied to RAM or not.

6.5 Chipset Features Setup

This Setup menu controls the configuration of the motherboard chipset.

ROM PCI/ISA BIOS
CHIPSET FEATURES SETUP
AWARD SOFTWARE INC.

Auto Configuration	: Enabled	CPU Warning Temperature	: 6°C- 176°F
DRAM Speed Selection	: 60ns	Current System Temp	: 6°C-176°F
MA Wait State	: Slow	current CPU/Chips Temp.	: 170°C- 6°F
SDRAM RAS-to-CAS Delay	: Slow	Current CPU Block Temp.	: 70°C- 6°F
SDRAM RAS Precharge Time	: Slow	Current CPU FAN Speed	: 0 RPM
SDRAM CAS latency Time	: 3	Current Chassis FAN Speed	: 0 RPM
DRAM Data Integrity Mode	: Non-ECC	VTT3(V)	: 1.98 V: 1.48 V
CPU-To-PCI IDE Posting	: Enabled	VCC(V)	
System BIOS Cacheable	: Disabled	IN2 (V)	: 3.42 V: 4.94 V
Video BIOS Cacheable	: Enabled	+ 5V	
Video RAM Cacheable	: Disabled	+12 V	12.16 V - 12V -12.37 V
8 Bit I/O Recovery Time	: 1	:	
16 Bit I/O Recovery Time	: 1	- 5 V	5-07 V
Memory Hole At 15M-16M	: Disabled	:	
Passive Release	: Enabled	ESC : Quit	: Select Item
Delayed Transaction	: Disabled	F1 : Help	PU/PD/+/- : Modify
AGP Aperture Size (MB)	: 64	F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Auto Configuration

This field predefines values for DRAM, cache timing according to CPU type and system clock. When this field is enabled, the predefined items will become read-only.

DRAM Speed Selection

This field sets the speed of the DRAM on board. The default setting is **60ns**.

MA Wait State

This field sets the wait state before the beginning of a memory read. The default setting is **Slow**.

SDRAM RAS-to-CAS Delay

When DRAM is refreshed, both rows and columns are addressed separately. This field allows you to determine the timing of transition from Row Address Strobe (RAS) to Column Address Strobe (CAS). The default setting is **Slow**.

SDRAM RAS Precharge Time

The precharge time is the number of cycles it takes for the RAS to accumulate its charge before DRAM refresh. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data. The default setting is **Slow**.

SDRAM CAS Latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. The default setting is **3**.

DRAM Data Integrity Mode (for 440LX AGPset only)

This field sets the data integrity mode of the DRAM installed. The default setting is *non-ECC*.

CPU-To-PCI IDE Posting

Data from the CPU to the PCI bus can be posted (buffered by the controller). The default setting is *Enabled*.

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

Selecting *Enabled* allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a memory access error may result.

8 Bit I/O Recovery Time

This field allows you to select the recovery time allowed for 8-bit I/O. By default, this field is set to *1 Clock*.

16 Bit I/O Recovery Time

This field allows you to select the recovery time allowed for 16-bit I/O. By default, this field is set to *1 Clock*.

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*.

Passive Release

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

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.

AGP Aperture Size (MB)

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. The default setting is 64M.

CPU Warning Temperature

This is a function of the CPU temperature sensor on the motherboard. This field sets the temperature at which the system warns the user of CPU 'overheat' and the system slows down until the temperature falls below a safe level.

Temp., Fan Speed, Voltages

These fields reflect the function of the onboard Hardware Monitoring Device that monitors the system temperature, CPU and chassis fan speed and system voltages. It allows the user to take precautionary measures to avoid system crashes.

6.6 Power Management Setup

The Power Management Setup allows you to save energy of your system effectively. It will shut down the hard disk and turn off video display after a period of inactivity.

ROM PCI/ISA BIOS (2A59IM29)
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	: V/H SYNC +Blank	Primary IDE 0	: Enabled
Video Off After	: Standby	Primary IDE 1	: Enabled
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	: Disabled
Throttle Duty Cycle	: 62.5%	Parallel Port	: Disabled
VGA Active Monitor	: Enabled		
Soft-Off by PWRBTN	: Instant-Off		
Resume by Ring	: Disabled		
Resume by Alarm	: Disabled		
		ESC : Quit	: Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Power Management

This field allows you to select the type of power saving management modes. There are four selections for Power Management.

- Disabled No power management.
- Min. Power Saving Minimum power management.
- Max. Power Saving Maximum power management. Only available for SL CPU.
- User Define Each of the ranges are from 1 min. to 1hr. Except for HDD Power Down which ranges from 1 min. to 15 min. (Default)

NOTE: In order to enable the CPU overheat protection feature, the Power Management field should not be set to Disabled.

PM Control by APM

This field allows you to use the Advanced Power Management device to enhance the Max. Power Saving mode and stop the CPU's internal clock. If the Max. Power Saving is not enabled, this will be preset to NO.

Video Off Method

This field defines the Video Off features. There are three options.

V/H SYNC + Blank Default setting, blank the screen and turn off vertical and horizontal scanning.

DPMS Allows the BIOS to control the video display card if it supports the DPMS feature.

Blank Screen This option only writes blanks to the video buffer.

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. The default setting is *Standby*.

Modem Use IRQ

This field defines the IRQ being used by the modem. By default, the IRQ is set to 3.

Doze Mode

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

Standby Mode

After the selected period of system inactivity, the fixed disk drive and the video shut off while all other devices still operate at full speed. The default setting is *Disabled*.

Suspend Mode

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

HDD Power Down

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

Throttle Duty Cycle

This field defines the power-off mode when using an ATX power supply. The *Instant Off* mode allows powering off immediately upon pressing the power button. In the *Delay 4 Sec* mode, the system powers off when the power button is pressed for more than four seconds or enters the suspend mode when pressed for less than 4 seconds. The default value is *Instant Off*.

VGA Active Monitor

When enabled, any video activity restarts the global timer for Standby mode.

Soft-Off by PWRBTN

This field defines the power-off mode when using an ATX power supply. The *Instant Off* mode allows powering off immediately upon pressing the power button. In the *Delay 4 Sec* mode, the system powers off when the power button is pressed for more than four seconds or enters the suspend mode when pressed for less than 4 seconds. The default value is *Instant Off*.

Resume 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.

Resume by Alarm

This function is caused by the timer set in the BIOS that awakens the system from a soft off state.

Reload Global Timer Events

When enabled, an event occurring on each listed device restarts the global timer for Standby mode.

6.7 PNP/PCI Configuration

This option configures the PCI bus system. All PCI bus systems on the system use INT#, thus all installed PCI cards must be set to this value.

ROM PCI/ISA BIOS
PNP/PCI Configuration
AWARD SOFTWARE INC.

PNP OS Installed	: No	PCI IDE IRQ Map To	: PCI-AUTO
Resources Controlled by	: Manual	Primary IDE	: A
Reset Configuration Data	: Disabled	INT#	
		Secondary IDE	: B
		INT#	
IRQ-3 assigned to	: Legacy ISA	Used MEM base addr	: N/A
IRQ-4 assigned to	: Legacy ISA		
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: Legacy ISA		
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	ESC : Quit	: Select Item
DMA-1 assigned to	: PCI/ISA PnP	F1 : Help	PU/PD/+/- : Modify
DMA-3 assigned to	: PCI/ISA PnP	F5 : Old Values	(Shift) F2 : Color
DMA-5 assigned to	: PCI/ISA PnP	F6 : Load BIOS Defaults	
DMA-6 assigned to	: PCI/ISA PnP	F7 : Load Setup Defaults	
DMA-7 assigned to	: PCI/ISA PnP		

PNP OS Installed

This field allows you to specify if the operating system installed in your system is plug and play aware.

NOTE: Operating systems such as DOS, OS/2, and Windows 3.x do not use PnP.

Resources Controlled by

This PnP BIOS can configure all of the boot and compatible devices automatically. However, this capability needs you to use a PnP operating system such as Windows 95. The default value is **Manual**.

Reset Configuration Data

This field allows you to determine whether to reset the configuration data or not. The default value is **Disabled**.

IRQ3/4/5/7/9/10/11/12/14/15, DMA0/1/3/5/6/7 assigned to

These fields allow you to determine the IRQ/DMA assigned to the ISA bus and is not available to any PCI slot.

PCI IDE IRQ Map To

This field allows you to configure the type of IDE disk controller in your system. The default setup is *PCI-AUTO* which allows the system to automatically determine your IDE disk system configuration.

Primary IDE INT# / Secondary IDEe INT#

These fields tell which INT3 the PCI IDE card is using for its interrupts.

Used MEM base addr

Select a base address for the memory area used by any peripheral that requires high memory.

6.8 Load BIOS Defaults

This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.

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

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	HDD LOW LEVELF ORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	: Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Load BIOS Defaults except Standard CMOS Setup	

To load BIOS defaults value to CMOS SRAM, enter “Y”. If not, enter “N”.

6.9 Load Setup Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

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

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	: Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Load BIOS Defaults except Standard CMOS Setup	

To load SETUP defaults value to CMOS SRAM, enter “Y”. If not, enter “N”.

6.10 Integrated Peripherals

This option sets your hard disk configuration, mode and port.

ROM PCI/ISA BIOS INTEGRATED PERIPHERALS AWARD SOFTWARE INC.			
IDE HDD Block Mode	: Enabled	Onboard Parallel Port	: 378/IRQ7
IDE Primary Master PIO	: Auto	Parallel Port Mode	: 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 UDMA	: Auto		
OnChip IDE First Channel	: Enabled		
OnChip IDE Second Channel	: Enabled		
USB Keyboard Support	: Disabled		
Init AGP Display First	: Disabled		
Onboard FDD Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4	ESC : Quit	: Select Item
Onboard Serial Port 2	: 2F8/IRQ3	F1 : Help	PU/PD/+/- : Modify
UR2 Mode	: Normal	F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

IDE HDD Block Mode

This field allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive.

IDE Primary/Secondary Master/Slave PIO

These fields allow your system hard disk controller to work faster. Rather than have the BIOS issue a series of commands that transfer to or from the disk drive, PIO (Programmed Input/Output) allows the BIOS to communicate with the controller and CPU directly.

The system supports five modes, numbered from 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode.

IDE Primary/Secondary Master/Slave UDMA

This field allows your system to improve disk I/O throughput to 33Mb/sec with the Ultra DMA/33 feature. The options are *Auto* and *Disabled*.

On-Chip Primary/Secondary PCI IDE

These fields allow you either to enable or disable the Primary/Secondary controller. You might choose to disable the controller if you were to add a higher performance or specialized controller.

USB Keyboard Support

This option enables or disables the USB keyboard support on the motherboard.

Init AGP Display First

This field allows the system to initialize first the VGA card in the AGP slot on the motherboard when system is turned on.

Onboard FDD Controller

This option allows you to select the onboard FDD port.

Onboard Serial/Parallel Port

These fields allow you to select the onboard serial and parallel ports and their addresses. The default value for these ports are:

Serial Port 1	3F8/IRQ4
Serial Port 2	2F8/IRQ3
Parallel Port	378H/IRQ7

UR2 Mode

This field determines the UART 2 mode in your computer. The default setting is *Normal*.

Parallel Port Mode

This field allows you to determine the operating mode of the onboard parallel port. The default setting is *SPP* which is for normal printer port.

6.11 Supervisor / User Password

These two options set the system password. *Supervisor Password* sets a password that will be used to protect the system and Setup utility. *User Password* sets a password that will be used exclusively on the system. To specify a password, highlight the type you want and press <Enter>. The **Enter Password:** message prompts on the screen. Type the password, up to eight characters in length, and press <Enter>. The system confirms your password by asking you to type it again. After setting a password, the screen automatically returns to the main screen.

To disable a password, just press the <Enter> key when you are prompted to enter the password. A message will confirm the password to be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

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

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	: Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Change / Set / Disable Password	

6.12 IDE HDD Auto Detection

This option detects the parameters of an IDE hard disk drive, and automatically enters them into the Standard CMOS Setup screen.

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

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master:								
Select Primary Master Option (N=SKIP) : N								
OPTIONS	TYPE	SIZE	CYL	HEA	PRECOMP	LANDZ	SECTOR	MODE
1 (Y)	0	0	0	0	0	0	0	NORMAL
NOTE: Some OSes (like SCO-UNIX) must use "NORMAL" for installation								

Up to four IDE drives can be detected, with parameters for each appearing in sequence inside a box. To accept the displayed entries, press the “Y” key; to skip to the next drive, press the “N” key. If you accept the values, the parameters will appear listed beside the drive letter on the screen.

6.13 HDD Low Level Format

This option should only be used by a professional. Low-level formatting can cause irreparable damage to your hard disk. The procedures include selecting the drive you want to low-level format, determining the bad tracks, and proceeding with pre-formatting.

6.14 Save & Exit Setup

This option allows you to determine whether to accept the modifications or not. If you type “Y”, you will quit the setup utility and save all changes into the CMOS memory. If you type “N”, you will return to Setup utility.

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

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	: Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Save Data to CMOS & Exit Setup	

6.15 Exit Without Saving

Select this option to exit the Setup utility without saving the changes you have made in this session. Typing “Y” will quit the Setup utility without saving the modifications. Typing “N” will return you to Setup utility.

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

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC : Quit	: Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Abandon all Data & Exit Setup	

Chapter 7 System Monitor Utility

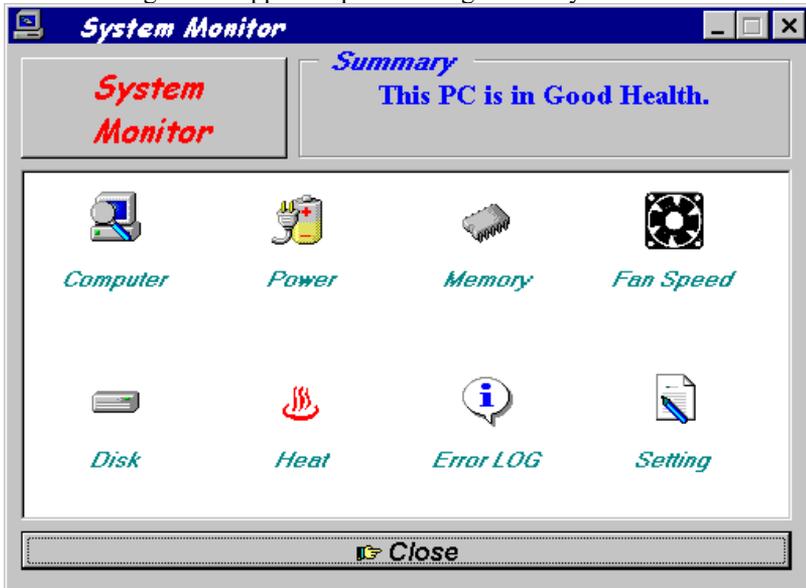
System Monitor is a utility that monitors the system temperature, voltages, fan rotation speed and other parameters in your system. It gives an alarm in conditions when voltages are not stable or temperature exceeds safe limits in order to prevent systems from crashing and ensure system stability.

NOTE: System Monitor currently supports English and Chinese under Windows 95 and Windows NT. English will be used for other language environments.

When System Monitor is started, the icon below appears in the task bar in the Windows environment.



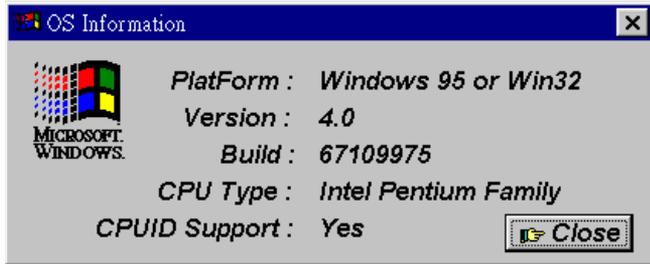
The following screen appears upon clicking on the System Monitor icon.



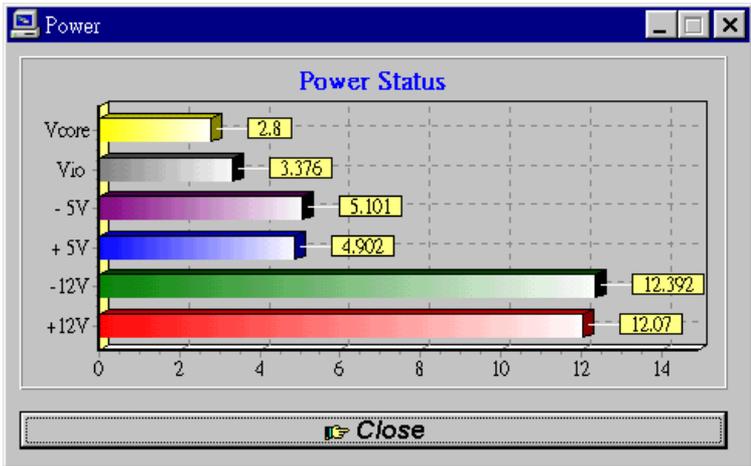
Clicking on the upper left corner button would show you the latest company information. "Summary" provides the currently system status.

The section below describes the different functions of System Monitor.

1. Computer - displays the current working system version and processor type.



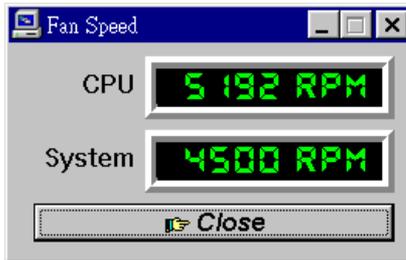
2. Power - displays the current voltage status.



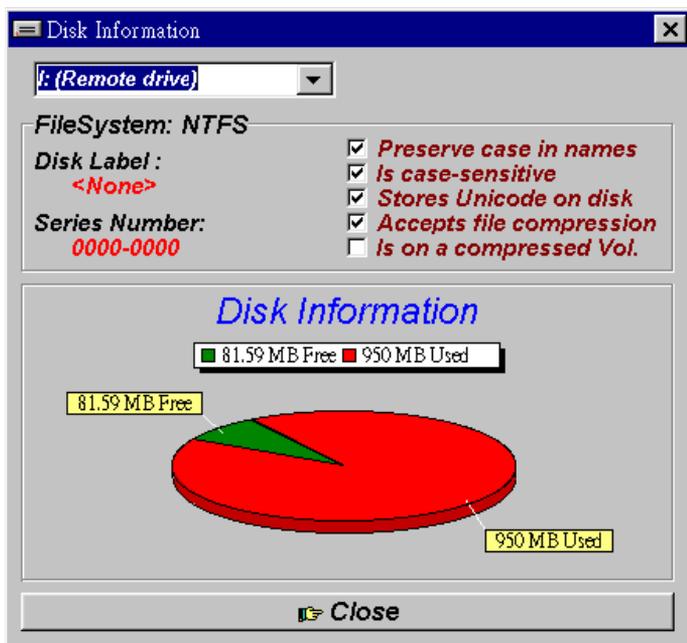
- 3. Memory - displays the current memory usage status.



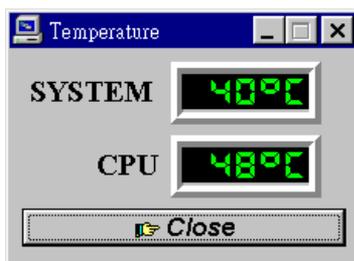
- 4. Fan Speed - displays the current rotation speeds of CPU and Chassis fans.



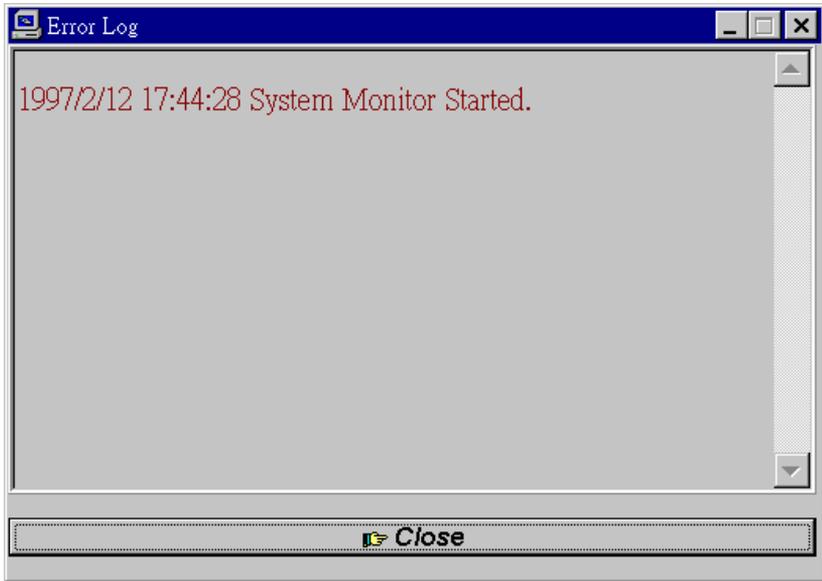
-
5. Disk - displays the disk supported formats and disk space.



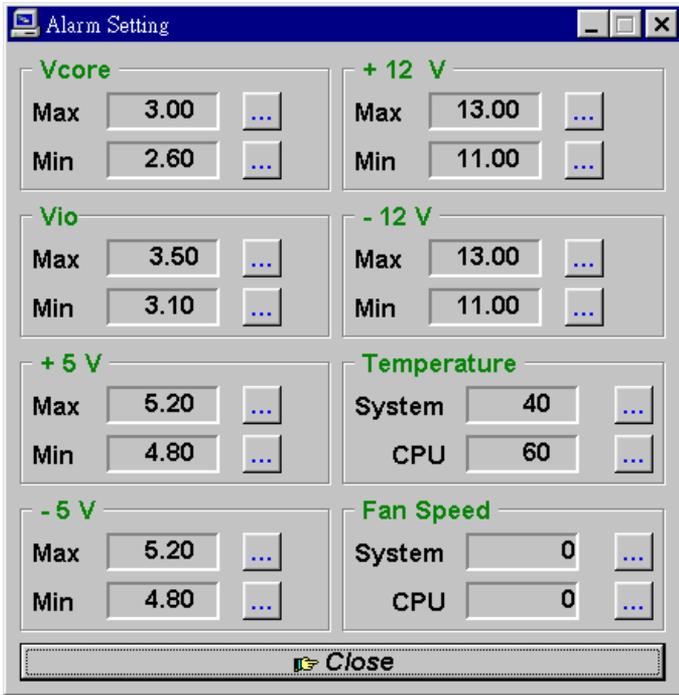
6. Heat - displays the CPU and system temperatures.



- 7. Error Log - displays errors occurring after System Monitor is started.



-
8. Setting - Sets the values at which an alarm is sounded.



Voltage : The acceptable voltage range between the "MAX" and "MIN" value.

Temperature : The temperature threshold.

Fan Rotation Speed : The minimum rotation speed.

NOTE: Intel has defined a tolerance for different voltages:

12 Volts - 10% (10.8V ~ 13.2V)

5 Volts - 5% (4.75 ~ 5.25%)

Vio - 5% (Vio for P54C CPU is 3.5V. Vio for P55C is 3.3V)

Vcore - 5

APPENDIX

A. Slot 1 Retention Mechanism

1. To install the Slot 1 mechanism, fasten it with the four screws from underneath the motherboard. Refer to the drawing below.
2. To release the CPU module from the retention mechanism, press the two sides of the module. Refer to the drawing below.