IB3
USER'S MANUAL

3D-AGP VGA / 3D-Audio M/B
FOR SOCKET 370 Processor

NO. G03-IB3R1A

Release date: JAN 2001

** Year 2000 compliant **

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USER'S NOTICE

Manual Revision Information

Reversion	Revision History	Date
1.0	First Release	Jan 2001

Item Checklist

☑ Motherboard

☑ Cable for IDE/Floppy

☑ CD for motherboard utilities

☐ Cable for USB Port (Option)

☑ Cable for COM1/COM2

☑ Cable for Audio/Game Port

☑ Cable for Parallel Port/PS2_Mouse

☑ User's Manual

Intel® Processor Family
Thermal Solutions

As processor technology pushes to faster speeds and higher performance, thermal management becomes increasingly crucial when building computer systems. Maintaining the proper thermal environment is key to reliable, long-term system operation. The overall goal in providing the proper thermal environment is keeping the processor below its specified maximum case temperature. Heatsinks induce improved processor heat dissipation through increased surface area and concentrated airflow from attached fans. In addition, interface materials allow effective transfers of heat from the processor to the heatsink. For optimum heat transfer, Intel recommends the use of thermal grease and mounting clips to attach the heatsink to the processor.

When selecting a thermal solution for your system, please refer to the website below for collection of heatsinks evaluated and recommended by Intel for use with Intel processors.

Vendor list for heatsink and fan of **Pentium® !!! processor**, please visit：
http://developer.intel.com/design/Pentiumiii/components/index.htm
Vendor list for heatsink and fan of **Intel® Celeron™ processor**, please visit：
http://developer.intel.com/design/celeron/components/index.htm

Chapter 1

Introduction of IB3 Motherboard

1-1 Feature of motherboard

The IB3 motherboard is design for use Intel's new generation Pentium processors, which utilize the Socket 370 design and the memory size expandable to 256MB (or 512MB by using 128Mb technology).

This motherboard using newest DDM (Dynamic Display Memory) architecture to increase systems display performance and many other new feature that meets future specification. With integrated 3D Graphic Acceleration, makes this board lower cost alternative to a video card

This board support Auto setting and Jump-less solution, users install CPU don't need change any jumper and also can setting Front Side Bus Frequency (CPU Host Clock), CPU ratio in BIOS SETUP "Miscellaneous Control", makes user over-clocking possibility.

This motherboard use Intel 810E chipset, whose 133MHz front side bus interface delivers a clear upgrade path to the future generation of 133MHz processors and PC100/ PC-133 SDRAM. It offers ULTRA DMA 66MB/sec (ATA 66) to provide speedier HDD throughout that boosts overall system performance.

This board also integrated AC'97 2.1 CODEC on board which is fully compatible with Sound Blaster Pro® that gives you the best sound quality and compatibility. With USB control as well as capability of expanding to 2 USB connectors, which guarantees this board to meet future USB demand. Moreover, this motherboard has built-in hardware monitor function that capable of monitor and protect your computer.

When use ATX Power Supply this board also support RTC Alarm, Ring-In Wake Up, Wake On LAN, Keyboard/Mouse Power On, Auto power on after AC recovery power management function.

This motherboard provides high performance & meets future specification demand. It is really wise choice for your computer.

1-2 Specification

Spec	Description
Design	∗ Baby AT form factor 4 layers PCB size: 22 x 17 cm
Chipset	∗ INTEL 810E Chipset
Clock Generator	∗ Winbond 83194AR-We ∗ Support 66/100/133MHz system Bus Clock (CPU Bus Clock) ∗ Support CPU Frequency setting in BIOS Setup
CPU Socket	∗ Support Pentium® III 500~1GHz processor ∗ Support Celeron™ 300~800MHz processor ∗ Support 66, 100 and 133MHz CPU Bus clock processors ∗ Reserves support for future Intel Pentium® III processors ∗ Support Cyrix MIII processors
Memory Socket	∗ 168-pin DIMM socket x2 ∗ PC-100/PC-133 SDRAM expandable to 512MB ∗ Support 3.3V SDRAM DIMM
Expansion Slot	32-bit PCI slot x3
Integrate VGA	∗ 3D graphic acceleration ∗ 8MB Frame Buffer DVMT (Dynamic Video Memory Technology ∗ 3D Hyper Pipelined Architecture ∗ 3D Graphics Visual /Texturing Enhancements ∗ Up to 1600 x 1200 in 8-bit Color at 85Hz Refresh. ∗ H/W Motion Compensation Assistance for S/W MPEG2 decode ∗ Software DVD at 30fps
Integrate IDE	∗ 2 channel of Bus Master IDE port supporting ULTRA DMA 33/66 mode devices, supports Enhanced IDE devices such as Tape Backup, CD-ROM 、ZIP、LS-120 Drives
Audio	∗ AC'97 Digital Audio controller integrated ∗ AC'97 Audio CODEC on board ∗ Audio driver and utility included
BIOS	∗ Award 2Mb Flash ROM
Multi I/O	∗ Keyboard and PS/2 mouse connectors ∗ Floppy disk drive connector x1 ∗ Parallel port x1 ∗ Serial port x2 ∗ USB connector x2 ∗ Audio connector (Line-in, Line-out, MIC & Game Port)

1-3 Motherboard Diagram
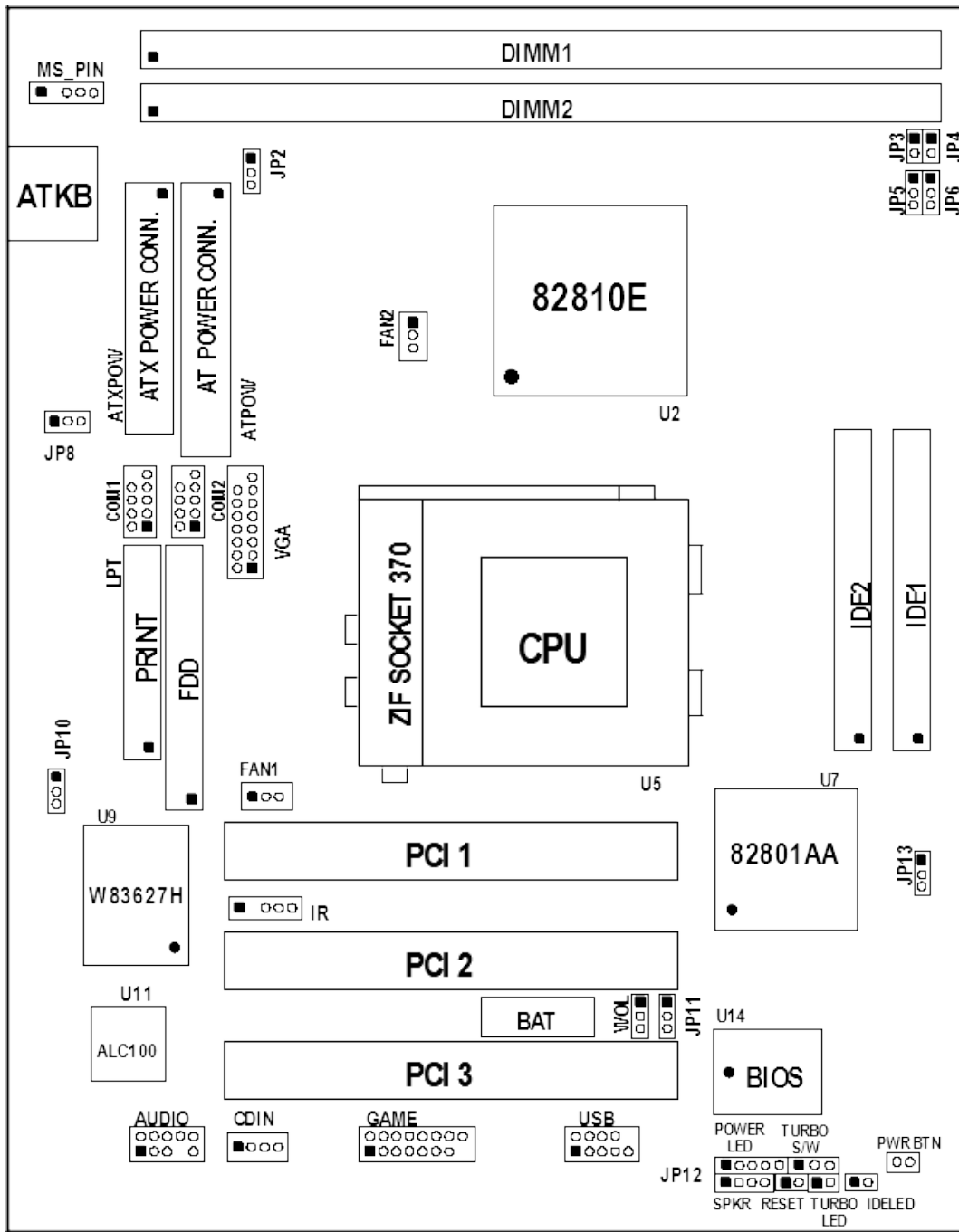
Figure 1-1

1-4 Quick Reference for Jumpers, Connectors & Expansion Socket

Jumper	Name	Description	Page
JP3, JP4, JP5, JP6	CPU Bus/SDRAM Frequency Selection	*Auto* JP3:ON, JP4:ON, JP5:1-2, JP6:1-2 *66Mhz* JP3:Off, JP4:Off, JP5:2-3, JP6:2-3 *100Mhz* JP3:Off, JP4:Off, JP5:1-2, JP6:2-3 *133Mhz* JP3:Off, JP4:Off, JP5:1-2, JP6:1-2	p.6
JP2	V I/O Voltage	1-2 : For V I/O 3.3V (Default) 2-3 : For V I/O 3.45V	p.7
JP8	Keyboard Power on Function (K.B. Voltage)	1-2 : Enabled (Only for ATX Power) 2-3 : Disabled	p.7
JP10	Clear Keyboard Power On Password setting	1-2 : Default 2-3 : Clear Password	p.7
JP11	CMOS RAM Clear	1-2 Default for R.T.C. ; 2-3 Reset R.T.C.	p.8

Connectors

Connector	Name	Description	Page
ATPOW	AT Power Connector	12-Pin Block	p.14
ATXPOW	ATX power Connector	20-Pin Block	p.14
ATKB	Keyboard Connector	5-Pin Female	p.14
MS_PIN	PS/2 Mouse Connector	6-Pin Block	p.15
LPT	Parallel Port Connector	26-Pin Block	p.15
COM1, COM2	Serial Port COMA&COMB	10-Pin Block	p.15
FDD	Floppy Driver Connector	34-Pin Block	p.16
IDE1	Primary IDE Connector	40-Pin Block	p.16
IDE2	Secondary IDE Connector	40-Pin Block	p.16
IDELED	IDE activity LED	2-Pin Connector	p.17
FPC	Front Panel Connector	16-Pin Block	p.17
IR	Infrared Module Connector	5-Pin Block	p.18
USB	USB Port Connector	10-Pin Block	p.18
FAN1, FAN2	FAN Connector	1-2 12V Power Connector 2-3 ACPI FAN power control Connector	p.18
PWR_BTN	ATX power button/Soft power button	2-pin Connector	p.18
VGA	VGA Connector	16-pin Block	p.19
Audio	Audio Connector	10-pin Connector	p.19
Game	Game port Connector	16-pin Connector	p.19
CDIN	CD-Audio/ Sony	4-pin Block	p.20
WOL	Wake On LAN	3-pin Block	p.20

Expansion Sockets

Socket/Slot	Name	Description
DIMM1, DIMM2	DIMM Module Socket	168-Pin DIMM SDRAM Module Expansion Socket
Zip Socket370	CPU Socket	Celeron PPGA / Coppermine FC-PGA CPU Socket
PCI1, PCI2, PCI3	PCI Slot	32-bit PCI Local Bus Expansion Slots

Chapter 2

Hardware installation

2-1 Hardware installation Steps

Before using your computer, you had better complete the following steps:
1. Check motherboard setting
2. Install CPU
3. Install Memory
4. Install Expansion cards
5. Connect Ribbon cables, Panel wires, and power supply
6. Setup BIOS
7. Install software driver & utility

2-2 Checking Motherboard's Jumper Setting

1. **CPU Host/SDRAM Clock setting (3-pin) : JP3, JP4, JP5, JP6**
   The motherboard's CPU & SDRAM memory clock adjusted through jumper JP3, JP4, JP5, JP6. Table as below:

CPU/SDRAM (MHz)	JP3	JP4	JP5	JP6
Auto	ON	ON	1-2	1-2 (Default)
66/100	OFF	OFF	2-3	2-3
100/100	OFF	OFF	1-2	2-3
133/100	OFF	OFF	1-2	1-2

Table for the Pentium III and Celeron Socket 370 CPU

Celeron			Pentium III			Pentium III		
Speed	Bus	Ratio	Speed	Bus	Ratio	Speed	Bus	Ratio
300/66	66MHz	4.5x	400/100	100MHz	4x	750/100	100MHz	7.5x
333/66	66MHz	5.0x	450/100	100MHz	4.5x	800EB/133	133MHz	6.0x
366/66	66MHz	5.5x	500/100	100MHz	5.0x	800/100	100MHz	8.0x
400/66	66MHz	6.0x	500E/100	100MHz	5.0x	850/100	100MHz	8.5x
433/66	66MHz	6.5x	533B/133	133MHz	4.0x	866/133	133MHz	6.5x
466/66	66MHz	7.0x	533EB/133			933/133	133MHz	7.0x
500/66	66MHz	7.5x	550/100	100MHz	5.5x	1.0 GHz/133	133MHz	7.5x
533/66	66MHz	8.0x	550E/100	100MHz	5.5x			
566/66	66MHz	8.5x	600E/100	100MHz	6.0x			
600/66	66MHz	9.0x	600B/133	133MHz	4.5x			
633/66	66MHz	9.5x	600EB/133					
667/66	66MHz	10.0x	650/100	100MHz	6.5x			
700/66	66MHz	10.5x	667/133	133MHz	5.0x			
766/66	66MHz	11.5x	700/100	100MHz	7.0x			
800/100	100MHz	8x	733/133	133MHz	5.5x			

∗ *Because the Ratio are fixed by CPU Manufacture, users don't need to setting ratio any more, this table just for reference use.*

CPU Host/SDRAM Clock Setting

Auto   66/100   100/100   133/100
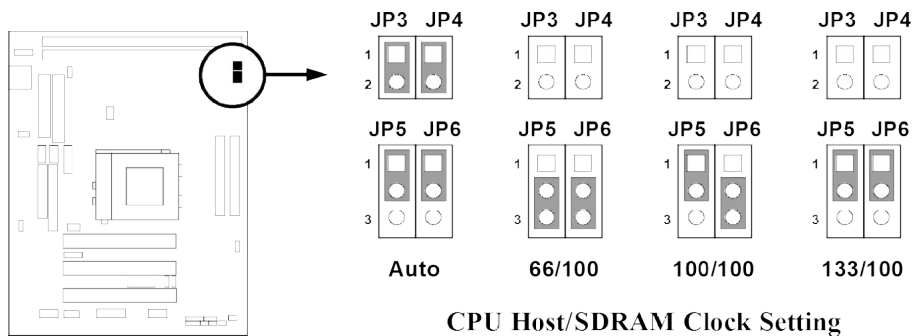
In "Miscellaneous Control" section of CMOS setup Utility, you can setting the CPU clock by BIOS setting please refer .

2.   V I/O Voltage setting (3-pin) : JP2

JP2   JP2

1-2 : V I/O 3.3V   2-3 : V I/O 3.45V
(Default)

V I/O Voltage Setting
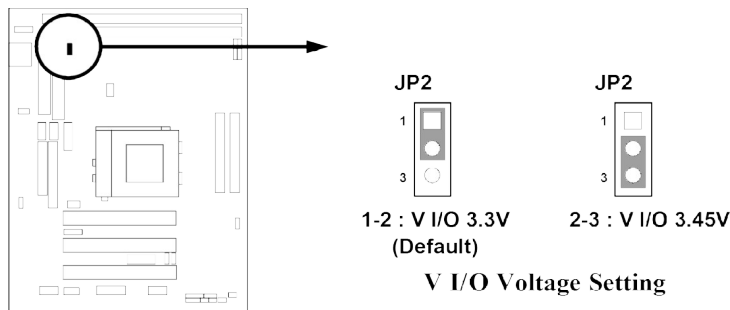
3.   Keyboard Power On Function setting (3-pin) : JP8

This allows you to disable the keyboard power on function. Set the jumper to enabled or disabled if you wish to use your keyboard (by pressing < >) to power on your computer, this feature requires an ATX power supply that can supply at least 300mA on the +5VSB lead. The default is set on disable.

JP8   JP8

Enabled   Disabled

Keyboard Powr On Function
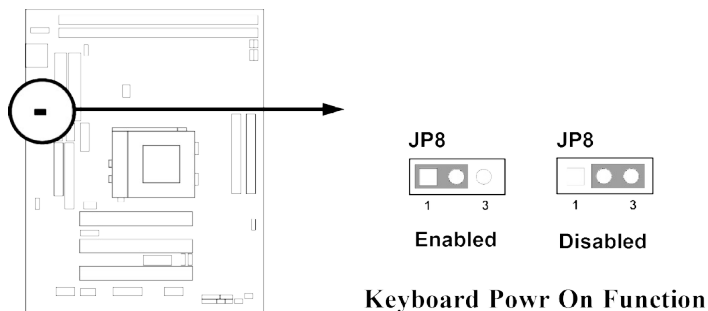
4.   Clear Keyboard Power On password setting (3-pin) : JP10

You can set keyboard power on function password to assure computer security to setting password through BIOS SETUP, and you can clear keyboard power on password by JP10.

JP10   JP10

Normal   Clear Setting

Clear Keyboard Power On Password Setting
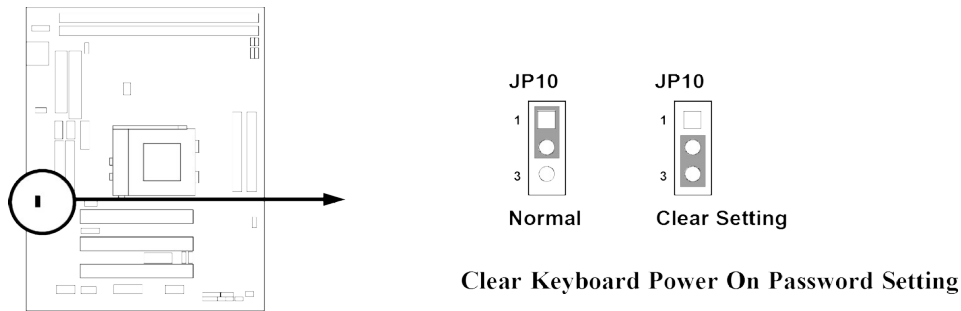
5. CMOS RAM Clear (3-pin) : JP11

A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JP11 to store the CMOS data.

*Note: **You can clear CMOS by shorting 2-3 pin, while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on, it will damage the motherboard always unplug the power cord from the wall socket.***

JP11   JP11

Normal   Clear CMOS

CMOS RAM Clear Setting
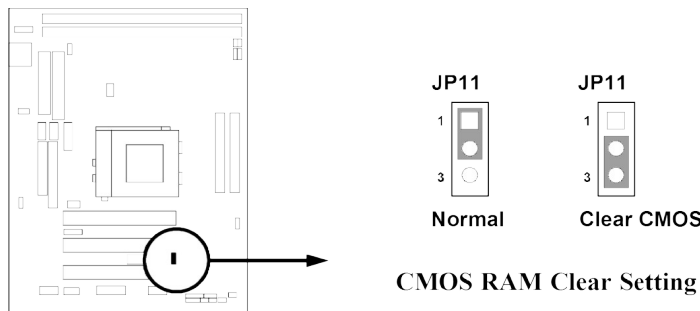
2-3 Install CPU

2-3-1 Glossary

Chipset (core logic) - two or more integrated circuits which control the interfaces between the system processor, RAM, I/O devises, and adapter cards.

Processor socket - the socket used to mount the system processor on the motherboard.

Slot (AGP, PCI, ISA, RAM) - the slots used to mount adapter cards and system RAM.

AGP - **A**ccelerated **G**raphics **P**ort - a high speed interface for video cards; runs at 1X (66MHz), 2X (133MHz), or 4X (266MHz).

PCI - **P**eripheral **C**omponent **I**nterconnect - a high speed interface for video cards, sound cards, network interface cards, and modems; runs at 33MHz.

Serial Port - a low speed interface typically used for mouse and external modems.

Parallel Port - a low speed interface typically used for printers.

PS/2 - a low speed interface used for mouse and keyboards.

USB - **U**niversal **S**erial **B**us - a medium speed interface typically used for mouse, keyboards, scanners, scanners, and some digital cameras.

Sound (interface) - the interface between the sound card or integrated sound connectors and speakers, mic, game controllers, and MIDI sound devices.

BIOS (**B**asic **I**nput/**O**utput **S**ystem) - the program logic used to boot up a computer and establish the relationship between the various components.

Driver - software, which defines the characteristics of a device for use by another device or other software.

Processor - the "Central Processing Unit" (CPU); the principal integrated circuit used for doing the "computing" in "personal computer"

Front Side Bus Frequency
The working frequency of the motherboard, which is generated by the clock generator for CPU, DRAM and PCI BUS.

CPU L2 Cache
The flash memory inside the CPU, normally Pentium III CPU has 256K or above, while Celeron CPU will have 128K.

The way to recognize the specification of CPU from the packing Pentium III 370 pins FC-PGA
On the surface of the CPU as shown on the right picture, under the word of "PENTIUM III" the code is:

RB 80526 P2 866 256

RB : FC–PGA packing
P2 : P2–133MHz front side bus frequency
      PY–100MHz front side bus frequency
866 : CPU internal frequency, where here is
      866MHz
256 : the size of L2 cache, where here is 256K

Celeron FC–PGA
On the surface of the CPU as shown on the right picture, under the word of "Celeron" the code is:

566/128/66/1.5V

566 : CPU internal frequency, where here is 566MHz
128 : the size of L2 cache, where here is 128K
66 : front side bus frequency, where here is 66MHz
1.5V : the voltage for the CPU
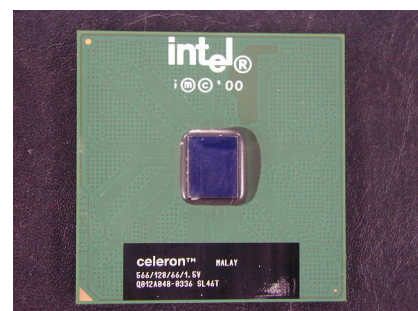
2-3-2 Setting CPU Bus Clock & Memory Clock Jumper

Setting the front side bus frequency and SDRAM frequency
The motherboard uses jumper JP3, JP4, JP5, JP6 for the front side bus frequency and SDRAM frequency setting as shown from the table below:

CPU/SDRAM (MHz)	JP3	JP4	JP5	JP6
Auto	ON	ON	1-2	1-2 (Default)
66/100	OFF	OFF	2-3	2-3
100/100	OFF	OFF	1-2	2-3
133/100	OFF	OFF	1-2	1-2

Example: Using a Pentium® III 866 CPU with front side bus frequency of 133MHz and PC-133 SDRAM module, the setting of JP3 ON, JP4 ON, JP5 1-2, and JP6 1-2. Will form CPU BUS CLOCK be 133MHz and SDRAM CLOCK be 100MHz.
For experience user looking for over clocking, please refer to sec 2-3-4

2-3-3 Install CPU

This motherboard provides a ZIF socket 370. The CPU that comes with the motherboard should have a cooling FAN attached to prevent overheating. If this is not the case, then purchase a correct cooling FAN before you turn on your system.

WARNING!	Be sure that there is sufficient air circulation across the processor's heatsink and CPU cooling FAN is working correctly, otherwise it may cause the processor and motherboard overheat and damage, you may install an auxiliary cooling FAN, if necessary.

To install a CPU, first turn off your system and remove its cover. Locate the ZIF socket and open it by first pulling the level sideways away from the socket then upward to a 90-degree angle. Insert the CPU with the correct orientation as shown below. The notched corner should point toward the end of the level. Because the CPU has a corner pin for two of the four corners, the CPU will only fit in the orientation as shown.

Pentium® III

Socket 370

Intel®

Colden Arrow

CPU ZIF Socket 370
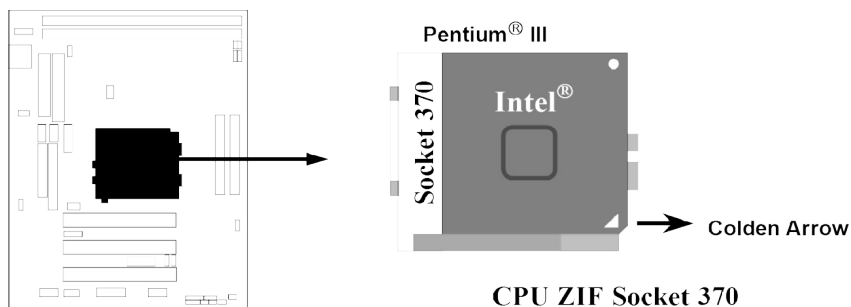
When you put the CPU into the ZIF socket. No forces require to insert of the CPU, then press the level to locate position slightly without any extra force.

2-3-4 Over clock Running

After setting the Jumper JP3, JP4, JP5, JP6 you can choose over clock running by BIOS CMOS SETUP UTILITY. When you entered CMOS SETUP UTILITY, choose "Miscellaneous Control." you will see the screen as below then.

You can choose the situation you want to try.

CPU/SDRAM (MHz)	JP3	JP4	JP5	JP6
Auto	**ON**	**ON**	**1-2**	**1-2 (Default)**
66/100	OFF	OFF	2-3	2-3
100/100	OFF	OFF	1-2	2-3
133/100	OFF	OFF	1-2	1-2

```
           CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                              Miscellaneous Control
┌────────────────────────────────────────────────┬──────────────────────────┐
│   Auto Detect DIMM/PCI Clk       Enabled        │        Item Help         │
│   Spread Spectrum                Disabled       ├──────────────────────────┤
│   CPU Host/SDRAM Clock          [Default]       │                          │
│   CPU Clock Ratio                X 3            │   Menu Level >           │
│              ┌─────────────────────────────┐    │                          │
│              │  CPU Host/SDRAM Clock        │    │                          │
│              │  Default           [   ]     │    │                          │
│              │  133/100 MHz.....  [   ]     │    │                          │
│              │  138/103 MHz.....  [   ]     │    │                          │
│              │  140/105 MHz.....  [   ]     │    │                          │
│              │  150/112 MHz.....  [   ]     │    │                          │
│              │                              │    │                          │
│              │  ↑↓:Move  ENTER:Accept  ESC:Abort │                         │
│              └─────────────────────────────┘    │                          │
│                                                 │                          │
├────────────────────────────────────────────────┴──────────────────────────┤
│  ↑ ↓ →← Move Enter:Select Item +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│        F5:Previous Values   F6:Optimized Defaults F7:Standard Defaults      │
└────────────────────────────────────────────────────────────────────────────┘
```

By press PageDown/PageUp key you can change the CPU Host/SDRAM/PCI Clock
When jumper setting CPU Host Clock 66MHz you can choose 66/100, 75/112, 83/124
When jumper setting CPU Host Clock 100MHz you can choose 95/95, 100/100, 117/117, 124/124
When jumper setting CPU Host Clock 133MHz you can choose 133/100, 138/103, 140/105, 150/112

> **NOTE!** Again we don't suggest user running over clock.

2-4 Install Memory

This motherboard provides two 168-pin DUAL INLINE MEMORY MODULES (DIMM)

sites for memory expansion available from minimum memory size of 32MB to maximum memory size of 512MB SDRAM.

DIMM 1	DIMM 2	System can be Accept or Not
168-pin DIMM	×	Accept
168-pin DIMM	168-pin DIMM	Accept
×	168-pin DIMM	Accept

Generally, installing SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 168-Pin PC100 & PC133 SDRAM module looks like.
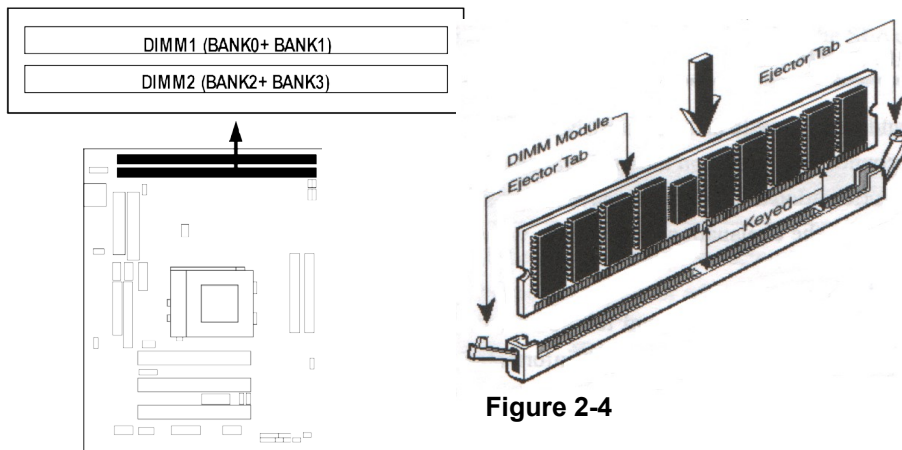
Figure 2-4

NOTE! When you install DIMM module fully into the DIMM socket the eject tab should be locked into the DIMM module very firmly and fit into its indention on both sides.

2-5 Expansion Cards

WARNING! Turn off your power when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.

2-5-1 Procedure For Expansion Card Installation

1. Read the documentation for your expansion card and make any necessary hardware or software setting for your expansion card such as jumpers.
2. Remove your computer's cover and the bracket plate on the slot you intend to use.
3. Align the card's connectors and press firmly.
4. Secure the card on the slot with the screen you remove above.
5. Replace the computer system's cover.
6. Set up the BIOS if necessary.
7. Install the necessary software driver for your expansion card.

2-5-2 Assigning IRQs For Expansion Card

Some expansion cards need an IRQ to operate. Generally, an IRQ must exclusively assign to one use. In a standard design, there are 16 IRQs available but most of them are already in use.

Standard Interrupt Assignments

IRQ	Priority	Standard function
0	1	System Timer
1	2	Keyboard Controller
2	N/A	Programmable Interrupt
3 *	11	Communications Port (COM2)
4 *	12	Communications Port (COM1)
5 *	13	Sound Card (sometimes LPT2)
6	14	Floppy Disk Controller
7 *	15	Printer Port (LPT1)
8	3	System CMOS/Real Time Clock
9 *	4	ACPI Mode when enabled
10 *	5	IRQ Holder for PCI Steering
11 *	6	IRQ Holder for PCI Steering
12 *	7	PS/2 Compatible Mouse Port
13	8	Numeric Data Processor
14 *	9	Primary IDE Channel
15 *	10	Secondary IDE Channel

* These IRQs are usually available for ISA or PCI devices.

2-5-3 Interrupt Request Table For This Motherboard

Interrupt request are shared as shown the table below:

	INT A	INT B	INT C	INT D
Slot 1	√			
Slot 2			√	
Slot 3				√
Onboard VGA				
Onboard USB				√
AC97/MC97		√		

> **IMPORTANT!** If using PCI cards on shared slots, make sure that the drivers support "Shared IRQ" or that the cards don't need IRQ assignments. Conflicts will arise between the two PCI groups that will make the system unstable or cards inoperable.

2-6 Connectors, Headers

1. **Power Connector: AT Power Connector (12-pin block): ATPOW**

This connector connects to a standard AT power supply. To connect the leads from the power supply, ensure first that the power supply is not plugged. Most power supplies provide two plugs (P8 and P9), each containing six wires, two of which are black. Orient the connectors so that the black wires are located in the middle.

Using a slight angle, align the plastic guide pins on the lead to their receptacles on the connector. Once aligned, press the lead onto the connector until the lead locks into place.

Power Connector on Motherboard   Power Plugs from Power Supply
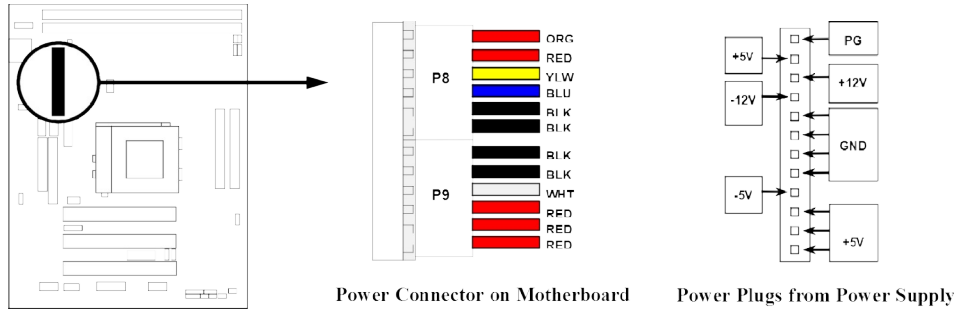
2. **Power Connector: ATX Power Connector (20-pin block): ATXPOW**

ATX Power Supply connector. This is a new defined 20-pins connector that usually comes with ATX case. The ATX Power Supply allows to use soft power on momentary switch that connect from the front panel switch to 2-pins Power On jumper pole on the motherboard. When the power switch on the back of the ATX power supply turned on, the full power will not come into the system board until the front panel switch is momentarily pressed. Press this switch again will turn off the power to the system board.

PIN	ROW2	ROW1
1	3.3V	3.3V
2	-12V	3.3V
3	GND	GND
4	Soft Power On	5V
5	GND	GND
6	GND	5V
7	GND	GND
8	-5V	Power OK
9	+5V	+5V (for Soft Logic)
10	+5V	+12V
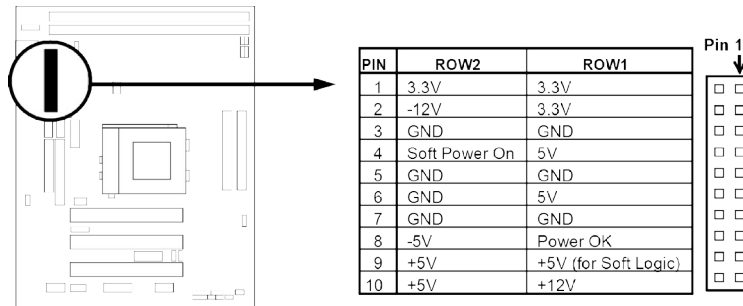
* Please don't turn off/on power supply too quickly, we recommend at least wait 4sec before turn on the power, to protect the system.

3. **Keyboard Connector (5-pin female): ATKB**

This connection is for a standard IBM-compatible keyboard. May also be known as a 101 enhanced keyboard.

Keyboard Connector (5-pins female)

Connector Plug from Keyboard
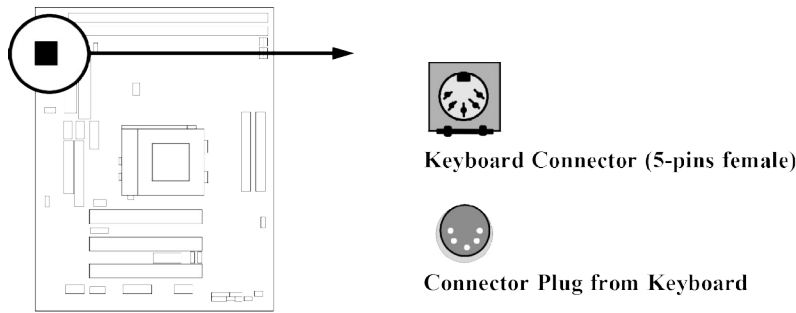
4. PS/2 Mouse Connector (5-pin block): MS_PIN

If you are using a PS/2 mouse, you must purchase an optional PS/2 mouse set which connects to the 5-pins block and mounts to an open slot on your computer's case.

PIN 1

	DATA	NC	GND	VCC	CLK
	1:	2:	3:	4:	5:

PS/2 Mouse Module Connector
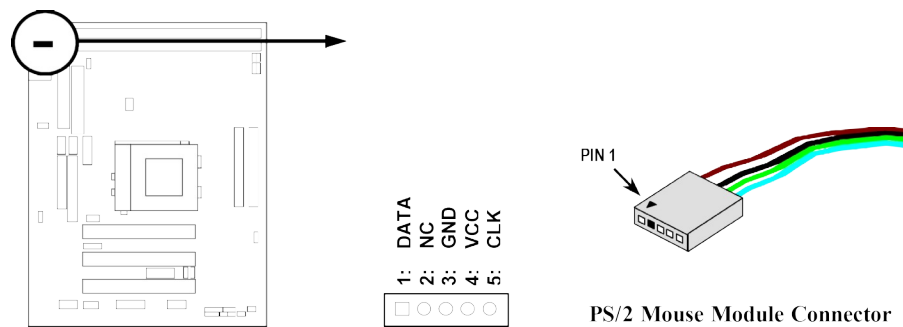
5. Parallel Printer Connector (26-pin Block): LPT

Connection for the enclosed parallel port ribbon cable with mounting bracket. Connect the ribbon cable to this connection and mount the bracket to the case on an open slot. It will then be available for a parallel printer cable.

> *NOTE: Serial printers must be connected to the serial port. You can enable the parallel port and choose the IRQ through BIOS Setup.*

LPT

Pin 1

Parallel Printer Connector
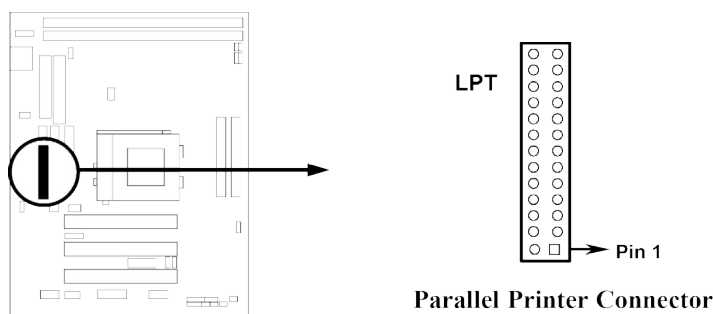
6. Serial port COMA and COMB Connector (Two 10-pin blocks): COM1, COM2

These connectors support the provided serial port ribbon cables with mounting bracket. Connect the ribbon cables to these connectors and mount the bracket to the case on an open slot. The two serial ports on the mounting bracket will then be used for pointing devices or other serial devices. See BIOS configuration of "Onboard Serial Port"
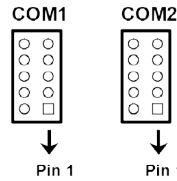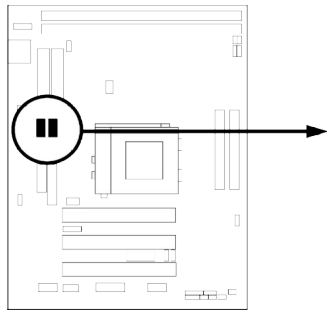
Serial port COMA and COMB Connector

7. Floppy drive Connector (34-pin block): FDD

This connector supports the provided floppy drive ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to the floppy drives.
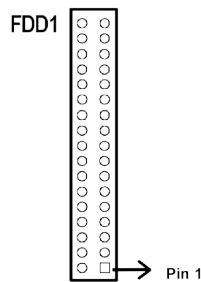
Floppy Drive Connector

8. Primary IDE Connector (40-pin block): IDE1

This connector supports the provided IDE hard disk ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers accordingly. Please refer to the documentation of your hard disk for the jumper settings.
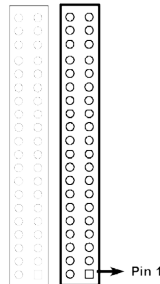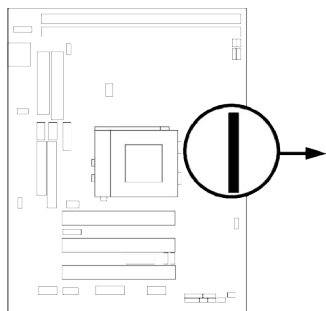
Primary IDE Connector

9. Secondary IDE Connector (40-pin block): IDE2

This connector connects to the next set of Master and Slave hard disks. Follow the same procedure described for the primary IDE connector. You may also configure two hard disks to be both, Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector.

Secondary IDE Connector
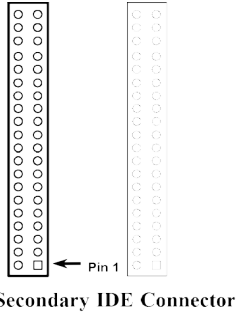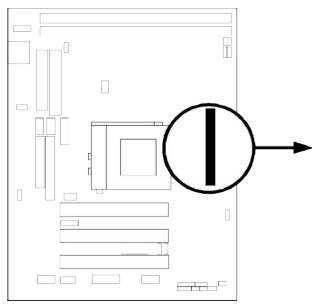
10. IDE activity LED: IDELED

This connector connects to the hard disk activity indicator light on the case.

IDELED

IDE (Hard Drive) LED
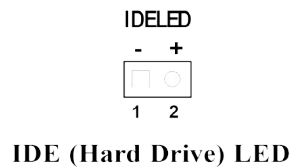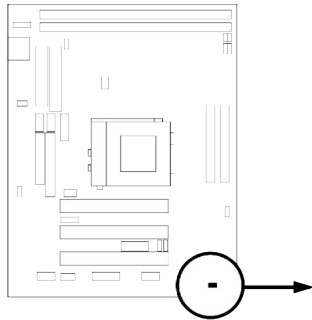
11. Front Panel connector: This 16-pin connector to connect to case front panel switch.

A. Turbo LED switch: TURBO LED

The motherboard's turbo function is always on. The turbo LED will remain constantly lit while the system power is on. You may also to connect the Power LED from the system case to this lead. See the figure below.

B. Reset switch lead: RESET

This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply. See the figure below.

C. Keyboard lock switch lead & Power LED: KEYLOCK & POWER LED

This 5-pin connector connects to the case-mounted key switch for locking the keyboard for security purposes and Power LED together.

D. Speaker connector: SPKR

This 4-pin connector connects to the case-mounted speaker. See the figure below.

System Case Connections
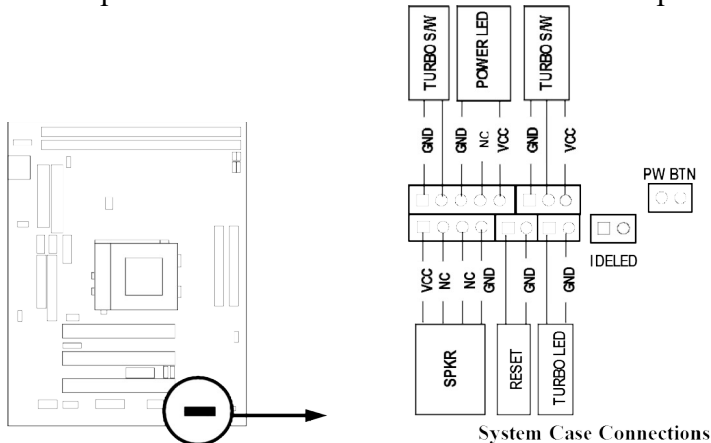
12. IR infrared module connector: IR

This connector supports the optional wireless transmitting and receiving infrared module. This module mounts to small opening on system cases that support this feature you must also configure the setting through BIOS setup. Use the five pins as shown on the Back View and connect a ribbon cable from the module to the motherboard according to the pin definitions.

IR Infrared Module Connector
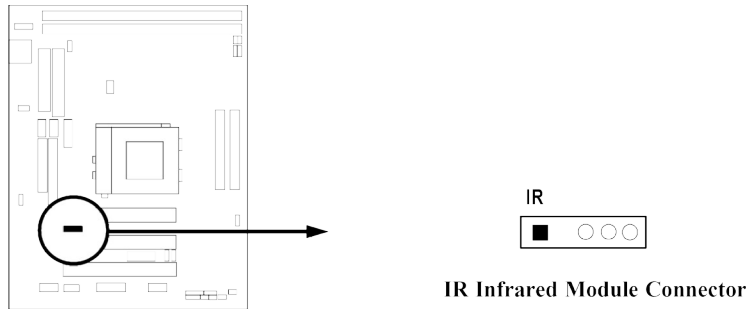
13. USB Port connector: USB

USB Port Connector
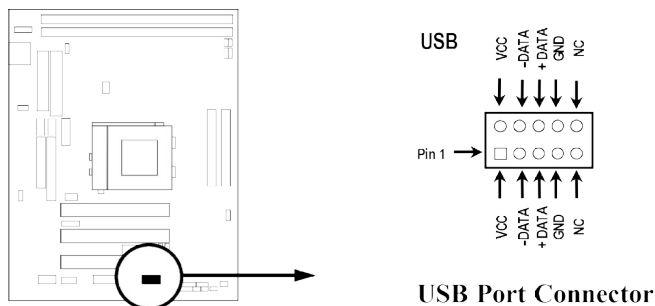
14. FAN connector: FAN1, FAN2

FAN Connector
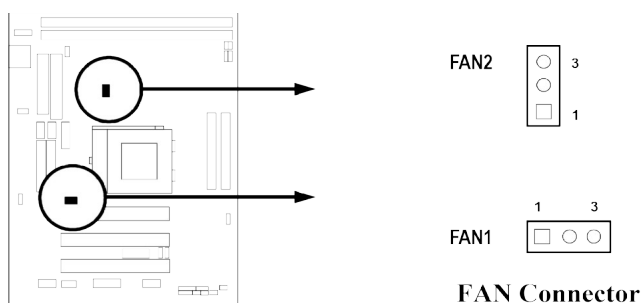
15. ATX Power button: PWR_BTN

When using ATX power, the system power can be controlled by a momentary switch connected to PS-ON Pushing the button once will switch ON/OFF the system. The system Power LED will shows the status of the system's power.

Selections

One touch Power ON/OFF

PS/ON

ATX Power Button
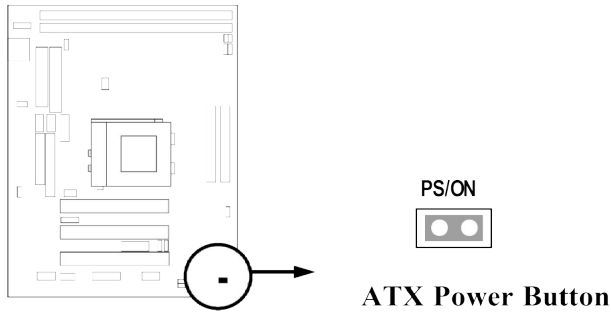
16. VGA connector: VGA
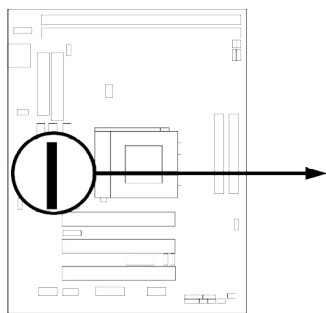
This connector supports the provided VGA cable with mounting bracket. Connect the ribbon cable to connector and mount the bracket to the case on an open slot.

VGA

Orient the red stripe on the monitor cable with Pin 1

Pin 1
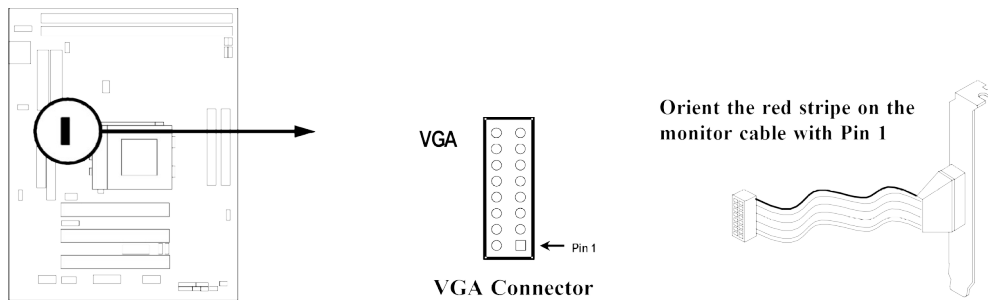
VGA Connector

17. Audio connector: Audio

AUDIO

L-OUT-R →		← L-OUT-L
GND →		← NC
MICP →		← MIC
GND →		← GND
L-IN-R →		← L-IN-L

Pin 1

Audio

Orient the red stripe on the monitor cable with Pin 1

Game
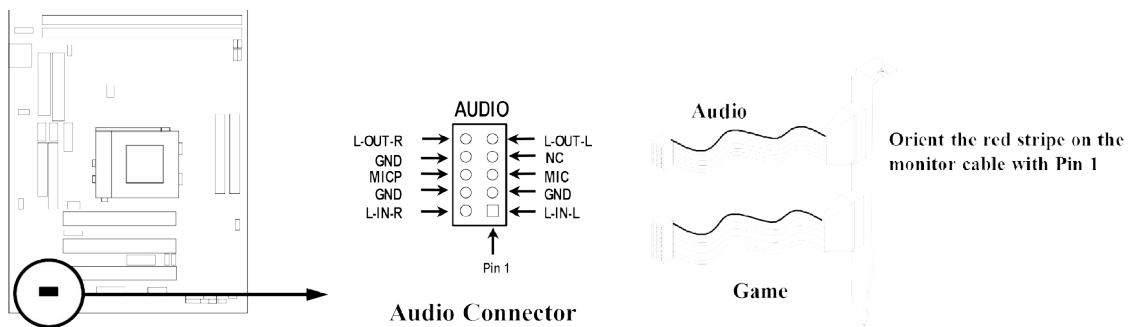
Audio Connector

18. Game Port connector: GAME

GAME

2 ○○○○○○○○ 16
Pin 1 ○○○○○○○○ 15

Audio

Orient the red stripe on the monitor cable with Pin 1

Game

GAME PORT Connector
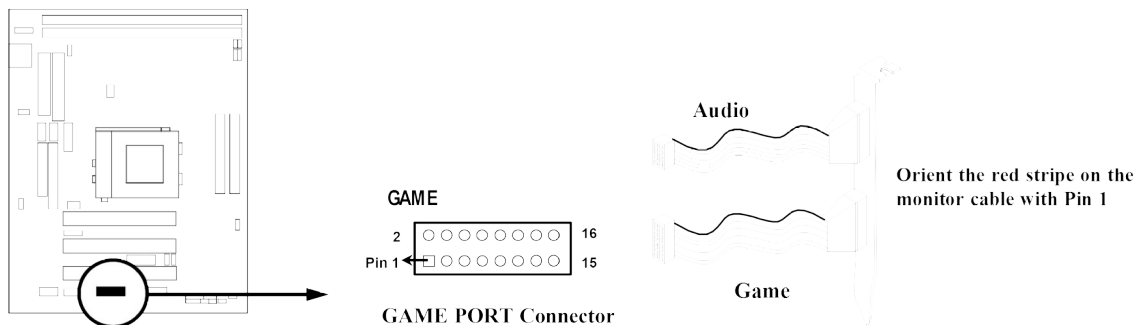
※ **This connector able to support two Game Ports.**

19. CD-ROM Audio connector: CDIN
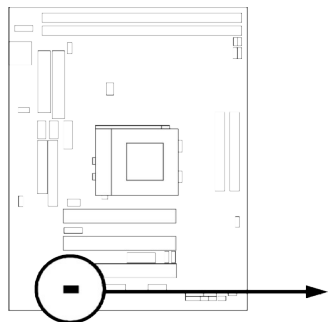
CD-ROM Audio Connector

20. Wake On LAN connector: WOL
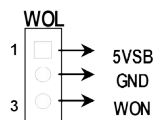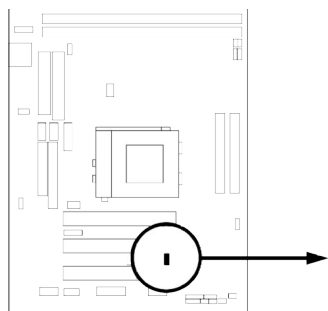
Wake On LAN Connector

※ **Wake On LAN function worked only when power supply support 5VSB more than 750mA current.**

Chapter 3

Introducing BIOS

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

In the BIOS Setup main menu of Figure 3-1, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press <Esc> to quit the BIOS Setup.

- Press ↑↓←→ (up, down, left, right) to choose, in the main menu, the option you want to confirm or to modify.

- Press <F10> when you have completed the setup of BIOS parameters to save these parameters and to exit the BIOS Setup menu.

- Press Page Up/Page Down or +/− keys when you want to modify the BIOS parameters for the active option.

3-1 Entering Setup

Power on the computer and by pressing <Del> immediately allows you to enter Setup.

If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to
      Press <F1> to continue, <Ctrl-Alt-Esc> or <Del> to enter Setup

3-2 Getting Help

Main Menu

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

Status Page Setup Menu/Option Page Setup Menu
Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <Esc>.

3-3 The Main Menu

Once you enter Award   BIOS CMOS Setup Utility, the Main Menu (Figure 3-1) will appear on the screen. The Main Menu allows you to select from fourteen setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

```
       CMOS Setup Utility - Copyright(C) 1984-2001 Award Software
   ┌──────────────────────────────────────────────────────────────────┐
   │                                │                                   │
   │  Standard CMOS Features        │  Miscellaneous Control            │
   │                                │                                   │
   │  Advanced BIOS Features        │  Load optimized Defaults          │
   │                                │                                   │
   │  Advanced Chipset Features     │  Load Standard Defaults           │
   │                                │                                   │
   │  Integrated Peripherals        │  Set Supervisor Password          │
   │                                │                                   │
   │  Power Management Setup        │  Set User Password                │
   │                                │                                   │
   │  PnP/PCI Configurations        │  Save & Exit Setup                │
   │                                │                                   │
   │  PC Health Status              │  Exit Without Saving              │
   ├────────────────────────────────┴───────────────────────────────────┤
   │  Esc : Quit                          ↑ ↓ → ←    : Select Item       │
   │  F10 : Save & Exit Setup                                            │
   ├────────────────────────────────────────────────────────────────────┤
   │                Time, Date, Hard Disk Type…                          │
   └────────────────────────────────────────────────────────────────────┘
```

Figure 3-1

Standard CMOS Features
Use this Menu for basic system configurations.

Advanced BIOS Features
Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features
Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals
Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

PnP/PCI configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This entry shows your PC health status.

Miscellaneous Control

Use this menu to specify your settings for Miscellaneous Control.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performances system operations.

Load Standard Defaults

Use this menu to load the BIOS default values for the minimal/stable performance system operation.

Set Supervisor/User Password

Use this menu to set User and Supervisor Passwords.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

3-4 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into several categories. Each

category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

```
         CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                            Standard CMOS Features
┌─────────────────────────────────────────────────────────────────────────────┐
│  Date (mm:dd:yy)            Tue, Jan, 16 2001    ┌──────────────────────────┐ │
│  Time (hh:mm:ss)            20 : 12 : 36         │       Item Help          │ │
│                                                  ├──────────────────────────┤ │
│  IDE Primary Master         Press Enter None     │                          │ │
│  IDE Primary Slave          Press Enter None     │  Menu Level >            │ │
│  IDE Secondary Master       Press Enter None     │                          │ │
│  IDE Secondary Slave        Press Enter None     │  Change the day, moth,   │ │
│                                                  │  year and century        │ │
│  Drive A                    1.44M, 3.25 in.      │                          │ │
│  Drive B                    None                 │                          │ │
│                                                  │                          │ │
│  Video                      EGA/VGA              │                          │ │
│  Halt On                    All Errors           │                          │ │
│                                                  │                          │ │
│  Base Memory                    640K             │                          │ │
│  Extended Memory              64512K             │                          │ │
│  Total Memory                 65536K             │                          │ │
│                                                  └──────────────────────────┘ │
├─────────────────────────────────────────────────────────────────────────────┤
│ ↑ ↓ → ←  Move Enter:Select Item +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│        F5:Previous Values   F6:Optimized Defaults   F7:Standard Defaults      │
└─────────────────────────────────────────────────────────────────────────────┘
```

Date

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

      Day   Day of the week, from Sun to Sat, determined by BIOS. Read-only.

      Month The month from Jan. through Dec.

      Date   The date from 1 to 31 can be keyed by numeric function keys.

      Year   The year depends on the year of the BIOS.

Time

The time format is <hour><minute><second>.

Primary Master/Primary Slave

Secondary Master/Secondary Slave

Press PgUp/<+>or PgDn/<−>to select Manual, None, Auto type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be "None".

If the controller of HDD interface is CD-ROM, the selection shall be "None"

Access Mode   The settings are Auto Normal, Large, and LBA.

Cylinder	number of cylinders
Head	number of heads
Precomp	write precomp
Landing Zone	landing zone
Sector	number of sectors

3-5 Advanced BIOS Features

```
          CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                           Advanced BIOS Features
┌──────────────────────────────────────────────┬─────────────────────────┐
│   Anti-Virus Protection        Disabled       │                         │
│   CPU Internal Cache           Enabled        │       Item Help         │
│   External Cache               Enabled        │─────────────────────────│
│   CPU L2 Cache ECC Checking    Disabled       │                         │
│   Processor Number Feature     Enabled        │  Menu Level >           │
│   Quick Power On Self Test     Enabled        │                         │
│   First Boot Device            Floppy         │  Allows you to choose   │
│   Second Boot Device           HDD-0          │  the VIRUS warning      │
│   Third Boot Device            LS120          │  feature for IDE Hard   │
│   Fourth Boot Device           Enabled        │  disk boot sector       │
│   Swap Floppy Drive            Disabled       │  protection. If this    │
│   Boot Up Floppy Seek          Enabled        │  function is enabled    │
│   Boot Up NumLock Status       On             │  and someone attempt to │
│   Gate A20 Option              Fast           │  write data into this   │
│   Typematic Rate Setting       Disabled       │  area, BIOS will show a │
│ x Typematic Rate (Chars/Sec)   6              │  warning message on     │
│ x Typematic Delay (Msec)       250            │  screen and alarm beep  │
│   Security Option              Setup          │                         │
│   OS Select For DRAM > 64MB    Non-OS2        │                         │
│   HDD S.M.A.R.T. Capability    Disabled       │                         │
│   Report No FDD For WIN95      No             │                         │
├──────────────────────────────────────────────┴─────────────────────────┤
│ ↑↓→← Move Enter:Select Item +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help│
│       F5:Previous Values  F6:Optimized Defaults  F7:Standard Defaults    │
└─────────────────────────────────────────────────────────────────────────┘
```

Anti-Virus Protection

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

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

CPU Internal Cache

The default value is Enabled.

> **Enabled** (default) Enable cache

Disabled   Disable cache

Note: The internal cache is built in the processor.

External Cache
Choose Enabled or Disabled. This option enables the Level 2 cache memory.

CPU L2 Cache ECC Checking
Choose Enabled or Disabled. This option enables the Level 2 cache memory ECC (error check correction).

Processor Number Feature
This option is for Pentium® III processor. During Enabled, this will check the CPU Serial number. Disabled this option if you don't want the system to know the Serial number.

Quick Power On Self-Test
This category speeds up Power On Self Test (POST) after you power on the computer. If this is set to Enabled. BIOS will shorten or skip some check items during POST.
        Enabled (default) Enable quick POST
        Disabled   Normal POST

First/Second/Third/Fourth Boot Device
The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS/ZIP, HDD-0/HDD-1/HDD-3, SCSI, CDROM, LAN and Disabled.

Swap Floppy Drive
Switches the floppy disk drives between being designated as A and B. Default is Disabled.

Boot Up Floppy Seek
During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Boot Up NumLock Status
The default value is On.
        On (default) Keypad is numeric keys.
        Off   Keypad is arrow keys.

Gate A20 Option
   Normal   The A20 signal is controlled by keyboard controller or chipset hardware.
   Fast (default) The A20 signal is controlled by port 92 or chipset specific method.

Typematic Rate Setting
Keystrokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected. The settings are: Enabled/Disabled.
Typematic Rate (Chars/Sec)
Sets the number of times a second to repeat a keystroke when you hold the key down. The settings are: 6, 8, 10, 12, 15, 20, 24, and 30.

Typematic Delay (Msec)
Sets the delay time after the key is held down before is begins to repeat the keystroke. The settings are 250, 500, 750, and 1000.

Security Option
This category allows you to limit access to the system and Setup, or just to Setup.
  System   The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
  Setup (default) The system will boot, but access to Setup will be denied if the correct password is not entered prompt.

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

Report No FDD For Win 95
Whether report no FDD for Win 95 or not. The settings are: Yes, No.

3-6 Advanced Chipset Features

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

```
          CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                          Advanced Chipset Features

    SDRAM CAS Latency Time        3                         Item Help
    SDRAM Cycle Time Tras/Trc     6/8
    SDRAM RAS-to-CAS Delay        3
    SDRAM RAS Precharge Time      3              Menu Level >
    Special Buffer Strength       Enabled
    System BIOS Cacheable         Enabled
    Video BIOS Cacheable          Enabled
    Memory Hole at 15M-16M        Disabled
    CPU Latency Timer             Disabled
    Delayed Transaction           Disabled
    On-Chip Video Window Size     64MB



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

Note: Change these settings only if you are familiar with the chipset.
SDRAM CAS Latency Time
When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. The settings are: 2 and 3.

SDRAM Cycle Time Tras/Trc

Select the number of SCLKs for an access cycle. The settings are: 5/7 and 6/8.

SDRAM RAS-to-CAS Delay
This field let's you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The settings are: 2 and 3.

SDRAM RAS Precharge Time
If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain date. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The settings are: 2 and 3.

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

Video BIOS Cacheable
Select Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are: Enabled and Disabled.

Memory Hole At 15M-16M
You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements. The settings are: Enabled and Disabled.

CPU Latency Timer
During Enabled, A deferrable CPU cycle will only be Deferred after it has been in a Snoop Stall for 31 clocks and another ADS# has arrived. During Disabled, A deferrable CPU cycle will be deferred immediately after the GMCH receives another ADS#.

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. The settings are: Enabled and Disabled.

On-Chip Video Window Size
This option enabled/disabled the on-chip video windows size for VGA driver use. The settings are: enabled, Disabled.

3-7 Integrated Peripherals

```
CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                  Integrated Peripherals
```

```
> OnBoard IDE Function          Press Enter                 Item Help
> OnBoard PCI DEVICE            Press Enter
> Winbond SuperIO Device        Press Enter
  Init Display First            PCI Slot             Menu Level >




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

OnBoard IDE Function

Please refer to section 3-7-1

OnBoard PCI Device

Please refer to section 3-7-2

Winbond SuperIO Device

Please refer to section 3-7-3

Init Display First

This item allows you to decide to activate whether PCI Slot or AGP VGA first. The settings are: PCI Slot, AGP Slot.

3-7-1 OnBoard IDE Function

```
               CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                                OnBoard IDE Function

   On-Chip Primary   PCI IDE      Enabled                Item Help
   On-Chip Secondary PCI IDE      Enabled
   IDE Primary Master PIO         Auto
   IDE Primary Slave  PIO         Auto             Menu Level >>
   IDE Secondary Master PIO       Auto
   IDE Secondary Slave  PIO       Auto
   IDE Primary Master UDMA        Auto
   IDE Primary Slave  UDMA        Auto
   IDE Secondary Master UDMA      Auto
   IDE Secondary Slave  UDMA      Auto
   IDE HDD Block Mode             Enabled


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

On-Chip IDE Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately. The settings are: Enabled and Disabled.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The settings are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Primary/Secondary Master/Slave UDMA
Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33 and Ultra DMA/66, select Auto to enable BIOS support. The settings are: Auto, Disabled.

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

3-7-2 OnBoard PCI DEVICE

```
           CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                            OnBoard PCI DEVICE
 ┌──────────────────────────────────────────────┬────────────────────────┐
 │  USB Controller             Enabled           │       Item Help        │
 │  USB Keyboard Support       Disabled          │                        │
 │  ** AC97 Codec is ALC100/200 **               ├────────────────────────┤
 │  AC97 Audio                 Auto              │  Menu Level >>         │
 │  Game Port Address          201               │                        │
 │  Midi Port Address          330               │                        │
 │  Midi Port IRQ              10                │                        │
 │                                               │                        │
 │                                               │                        │
 │                                               │                        │
 ├──────────────────────────────────────────────┴────────────────────────┤
 │  ↑ ↓ → ←  Move Enter:Select Item +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
 │         F5:Previous Values  F6:Optimized Defaults  F7:Standard Defaults │
 └────────────────────────────────────────────────────────────────────────┘
```

USB Controller
Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals. The settings are: Enabled, Disabled.

USB Keyboard Support
Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. The settings are: Enabled, Disabled.

AC97 Audio
This item allows you to decide to enable/disable the OnBoard AC 97' Codec chip to support Audio function. The settings are: Auto, Disabled.

Game Port Address/Midi Port Address

This will determine which Address the Game Port/Midi Port will use

3-7-3 Winbond SuperIO Device

```
              CMOS Setup Utility - Copyright(C) 1984-2001 Award Software
                            Winbond SuperIO Device
```

POWER ON Function	BUTTON ONLY	Item Help
KB Power ON Password	Enter	
HOT Key Power ON	Ctrl-F1	
Oboard FDC Controller	Enable	Menu Level >>
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
UART Mode Select	Normal	
RxD , TxD Active	Hi,Lo	
IR Transmission Delay	Enabled	
UR2 Duplex Mode	Half	
Use IR Pins	IR-Rx2Tx2	
Onboard Parallel Port	378/IRQ7	
Parallel Mode	SPP	
EPP Mode Select	EPP1.7	
ECP Mode Use DMA	3	
PWRON After PWR-Fail	Off	

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

Onboard FDC Controller
Select Enabled if your system has a floppy disk controller (FDD) installed on the system board and you wish to use it. If you install add-on FDC or the system has no floppy drive, select Disabled in this field. The settings are: Enabled and Disabled.

Onboard Serial Port 1/Port 2
Select an address and corresponding interrupt for the first and the second serial ports. The settings are: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART Mode Select
This item allows you to determine which InfraRed(IR) function of the onboard I/O chip, this functions uses.

Onboard Parallel Port
There is a built-in parallel port on the on-board Super I/O chipset that Provides Standard, ECP, and EPP features. It has the following option:
> **Disabled**
> **(3BCH/IRQ7)/**   Line Printer port 0
> **(278H/IRQ5)/**   Line Printer port 2
> **(378H/IRQ7)**   Line Printer port 1

Onboard Parallel Mode
> SPP   : Standard Parallel Port
> EPP   : Enhanced Parallel Port
> ECP   : Extended Capability Port
>   **SPP/EPP/ECP/ECP+EPP**

To operate the onboard parallel port as Standard Parallel Port only, choose "SPP." To operate the onboard parallel port in the EPP modes simultaneously, choose "EPP." By choosing "ECP", the onboard parallel port will operate in ECP mode only. Choosing "ECP+EPP" will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. The ECP mode has to use the DMA channel, so choose the onboard parallel port with the ECP feature. After selecting it, the following message will appear: "ECP Mode Use DMA" at this time, the user can choose between DMA channels 3 to 1. The onboard parallel port is EPP Spec. compliant, so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: "EPP Mode Select." At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

PWRON After PWR-Fail
This option will determine how the system will power on after a power failure

3-8 Power Management Setup

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

```
           CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                            Power Management Setup
  ┌─────────────────────────────────────────────────┬──────────────────────┐
  │   ACPI Function             Enabled              │       Item Help      │
  │   Power Management          User Define          │                      │
  │   Video off Method          V/H SYNC+Blank        ├──────────────────────┤
  │   Video Off In Suspend      Yes                  │                      │
  │   Suspend Type              Stop Grant           │   Menu Level >       │
  │   MODEM Use IRQ             3                     │                      │
  │   Suspend Mode              Disabled             │                      │
  │   HDD Power Down            Disabled             │                      │
  │   Soft-off by PWR-BTTN      Instant-Off          │                      │
  │   Wake-Up by PCI Card       Disabled             │                      │
  │   Power On by Ring          Disabled             │                      │
  │   CPU Thermal-Throttling    50.0%                │                      │
  │   Resume by Alarm           Disabled             │                      │
  │ x Date (of Month) Alarm     0                    │                      │
  │ x Time (hh:mm:ss) Alarm     0 : 0 : 0            │                      │
  │ > Reload Timer Events       Press Enter          │                      │
  ├─────────────────────────────────────────────────┴──────────────────────┤
  │ ↑ ↓ → ← Move Enter:Select Item +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
  │        F5:Previous Values  F6:Optimized Defaults F7:Standard Defaults   │
  └─────────────────────────────────────────────────────────────────────────┘
```

ACPI Function
This item allows you to Enabled/Disabled the Advanced Configuration and Power Management (ACPI). The settings are Enabled and Disabled.

Power Management
This category allows you to select the type (or degree) of power saving which is directly related to the following modes:
    User Define(default) Allows you to set each mode individually. When not disabled, each

of the ranges is from 1 min. to 1hr. except for HDD Power Down that ranges from 1 min. to 15 min. and disable.

Min Saving	Minimum power management. Doze Mode 1H, Suspend Mode=1 hr., Power Down=15 min.
Max Saving	Maximum power management. Doze Mode 1H, Suspend Mode=1 min., Power Down=1 min.

HDD Power Down

When enabled and after setting time of system inactivity, the hard disk drive will be powered down while all the other devices remain active.
The settings are: 1/2/3/4/5/6/7/8/9/10/11/12/13/14/15 Min and Disabled.

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.
The settings are: l/2/4/8/12/20/30/40 Min, 1 Hour, and Disabled.

Video Off Option

This determines the manner in which the monitor is blanked. The choice are Suspend → off, All Modes → Off, and Always On.

Video Off Method

This determines the manner in which the monitor is blanked.

DPMS (default)	Initial display power management signaling.
Blank Screen	This option only writes blanks to the video buffer.
V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Modem Use IRQ

This determines the IRQ in which the MODEM can use.
The settings are: 3, 4, 5, 7, 9, 10, 11, NA.

Soft-off by PWR-BTTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state. The settings are: Delay 4 Sec, Instant-Off.

Wake Up by PCI card

This will enable the system to wake up to PCI Lan Card.
The settings are: Enabled and Disabled.

Power On by Ring

During Disabled, the system will ignore any incoming call from the modem. During Enabled, the system will boot up if there's an incoming call from the modem.

CPU Thermal-Throttling

Select the CPU THRM-Throttling rate. The settings are: 12.5%, 25.0%, 37.5%, 50.0%, 62.5%, 75.0%, 87.5%.

Resume by Alarm

This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, choose the Date and Time Alarm:

Date(of month) Alarm
You can choose which month the system will boot up. Set to 0, to boot every day.

Time(hh:mm:ss) Alarm
You can choose what hour, minute and second the system will boot up.
Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

Reload Timer Events
Please refer to section 3-8-1

3-8-1 Reload Timer Events

```
         CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                             Reload Timer Events
┌─────────────────────────────────────────────┬─────────────────────────┐
│    Primary IDE 0              Disabled        │        Item Help        │
│    Primary IDE 1              Disabled        │                         │
│    Secondary IDE 0            Disabled        ├─────────────────────────┤
│    Secondary IDE 1            Disabled        │                         │
│    FDD,COM,LPT Port           Disabled        │   Menu Level >>         │
│    PCI PIRQ[A-D]#             Disabled        │                         │
│                                               │                         │
│                                               │                         │
│                                               │                         │
│                                               │                         │
├─────────────────────────────────────────────┴─────────────────────────┤
│ ↑ ↓ → ← Move Enter:Select Item +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│      F5:Previous Values   F6:Optimized Defaults F7:Standard Defaults    │
└────────────────────────────────────────────────────────────────────────┘
```

Reload Timer Events
Reload Global Timer events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything that occurs to a device which is configured as *Enabled,* even when the system is in a power down mode.

Primary IDE 0

Primary IDE 1

Secondary IDE 0

Secondary IDE 1

FDD, COM, LPT Port

PCI PIRQ[A-D] #

3-9 PnP/PCI Configuration Setup

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

```
         CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
```

```
                        PnP/PCI Configurations

   Reset Configuration Data        Disabled              Item Help

   Resources Controlled By         Manual
 x IRQ Resources                   Press Enter       Menu Level >

   PCI/VGA Palette Snoop           Disabled           Default is Disabled.
                                                      Select Enabled to
                                                      reset Extended System
                                                      Configuration Data
                                                      ESCD) when you exit
                                                      Setup if you have
                                                      installed a new add-on
                                                      and the system
                                                      reconfiguration has
                                                      caused such a serious
                                                      conflict that the OS
                                                      cannot boot

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

Resource Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95/98. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a ">").

The settings are: Auto (ESCD), Manual.

IRQ Resources

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

PCI/VGA Palette Snoop

Leave this field at *Disabled.* The settings are Enabled, Disabled.

3-10 PC Health Status

This section shows the Status of you CPU, Fan, Warning for overall system status. This is only available if there is Hardware Monitor onboard.

```
        CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                            PC Health Status
```

```
   Show PC Health in Post        Enabled            Item Help
   CPU Warning Temperatyre       Disabled
   Warning_Beep                  Enabled
   Shutdown Temperature          Disabled      Menu Level >
   Current System Temp.          25 °C/77 °F
   Current CPU Temperature       49 °C/120 °F
   Current FAN1   Speed.         4172 RPM
   Current FAN2   Speed.         4358 RPM
   Vcore                         2.0 V
   Vtt(V)                        1.55 V
   Vcc3.3                        3.36 V
   +5V                           4.94 V
   +12V                          11.97 V
   -12V                          -12.11 V
   -5V                           - 4.94 V
   VBAT(V)                       3.31 V
   5VSB(V)                       5.34 V


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

Show PC Health in Post

During Enabled, it displays information list below. The choice is either Enabled or Disabled

Current CPU Temperature/Current System Temp/Current FAN1, FAN2 Speed/Vcore/ Vtt/Vcc3.3/+5V/+12V/-12V/-5V (V)

This will show the CPU/FAN/System voltage chart and FAN Speed.

Shutdown Temperature

This option is for setting the Shutdown temperature level for the processor. When the processor reaches the temperature you set, this will shutdown the system.

3-11 Miscellaneous Control

This section is for setting CPU Frequency Control.

```
        CMOS Setup Utility – Copyright(C) 1984-2001 Award Software
                        Miscellaneous Control

   Auto Detect DIMM/PCI Clk      Enabled            Item Help
   Spread Spectrum               Disabled
   CPU Host/SDRAM Clock          Default
```

```
  CPU Clock Ratio                    X 3          Menu Level >




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

Auto Detect DIMM/PCI Clk

This item allows you to enable/disable auto detect DIMM/PCI Clock.
The settings are: Enabled, Disabled.

Spread Spectrum

This item allows you to set the Spread Spectrum.

CPU/SDRAM Clock

This item allows you to select the CPU/SDRAM Clock, refer to Page 11.

CPU Clock Ratio

This item allows you to select the CPU ratio.

3-12 Load Standard/Optimized Defaults

Load Standard Defaults

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

     Load Standard Defaults (Y/N)? N

Pressing <Y> loads the BIOS default values for the most stable, minimal-performance system operations.

Load Optimized Defaults

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

     Load Optimized Defaults (Y/N)? N

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

3-13 Set Supervisor/User Password

You can set either supervisor or user password, or both of them. The differences are:

Supervisor password: Can enter and change the options of the setup menus.

User password: Can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a

password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

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

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

Chapter 4
DRIVER & FREE PROGRAM INSTALLATION

Check your package and there is A MAGIC INSTALL CD included. This CD consists of all DRIVERS you need and some free application programs and utility programs. In addition, this CD also include an auto detect software which can tell you which hardware is installed, and which DRIVERS needed so that your system can function properly. We call this auto

detect software MAGIC INSTALL.

MAGIC INSTALL supports WINDOWS 95/98/98SE/NT4.0/2000

Insert CD into your CD-ROM drive and the MAGIC INSTALL Menu should appear as below. If the menu does not appear, double-click MY COMPUTER / double-click CD-ROM drive or click START / click RUN / type X:\SETUP.EXE (assuming X is your CD-ROM drive).
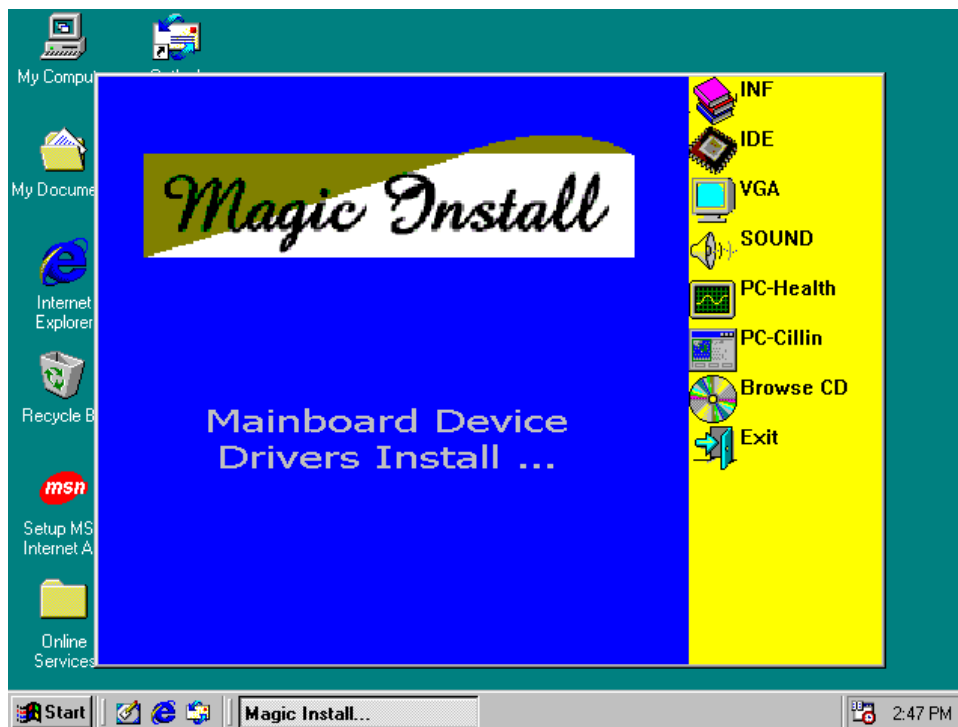
From MAGIC INSTALL MENU you may make 8 selections:
1. INF   install INTEL 810E chipset system driver
2. IDE   install ULTRA ATA33 or ULTRA ATA 66 driver
3. VGA   install on-board VGA driver
4. PC-HEALTH   install PC-Health Monitor IIII software for hardware monitoring device
5. SOUND   install AC97 sound driver and the program for editing/playback
6. PC-CILLIN   install PC-CILLIN98 anti-virus program
7. BROWSE CD   to browse the contents of the CD
8. EXIT   to exit from MAGIC INSTALL menu

Each selection is illustrated as below:

4-1 INF   install INTEL 810E chipset system driver

After you have completed the installation of your operation system (WINDOWS 95/98/ 98SE). You will find an UNKNOWN DEVICE in the device manager (START/SETTING/ CONTROL PANEL/SYSTEM/DEVICE MANAGER). You have to install INF driver as shown below:
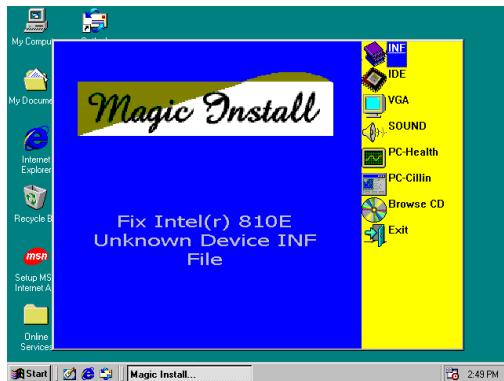
1. Click INF in the MAGIC INSTALL MENU

2. Click NEXT when Chipset Software Install Utility appears
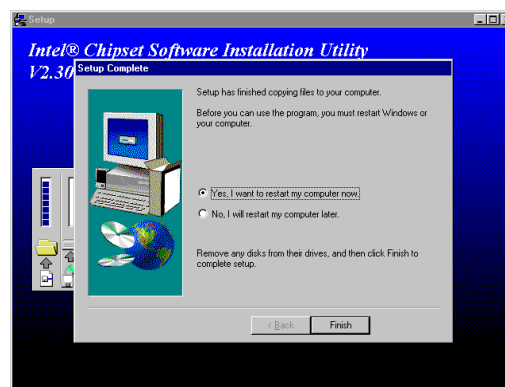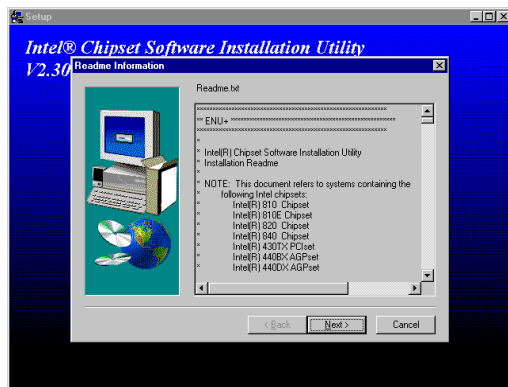
3. This chart shows motherboards supported by the driver click NEXT

4. Select if you want computer re-started click Finish

NOTE: MAGIC INSTALL will auto detect file path X:\INTEL810\INF\INFINST.EXE
    This driver supports WINDOWS 95/98/98SE/2000 (NT4.0 do not require)

4-2 IDE   install ULTRA ATA33 or ULTRA ATA 66 driver
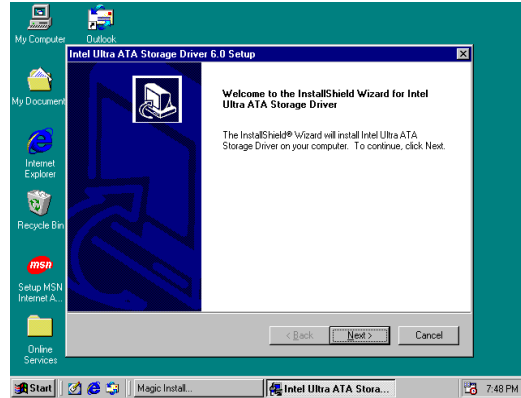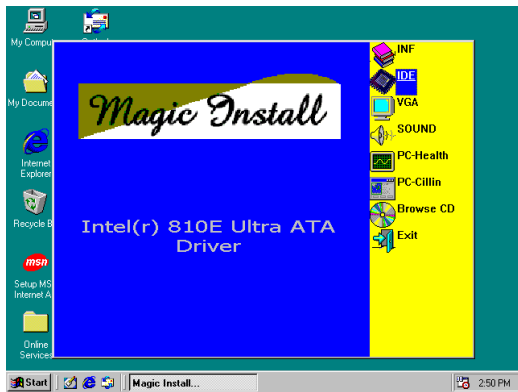
1. Click IDE when MAGIC INSTALL MENU appears

2. Click NEXT when INTEL Ultra ATA Storage Wizard appears
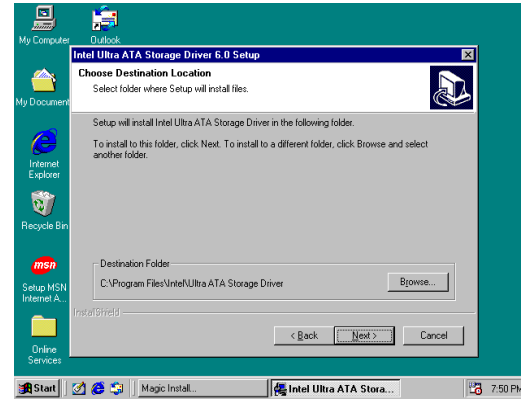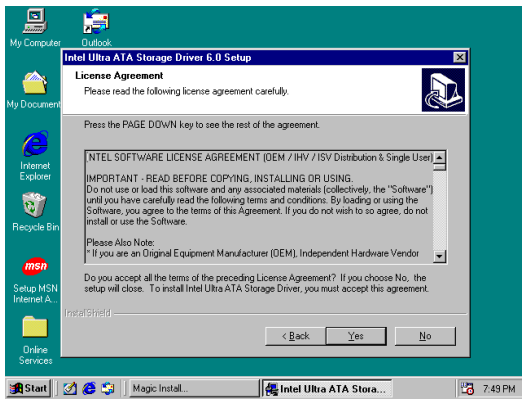
3. This is to announce the Copy Right click NEXT

4. Click NEXT or BROWSE to change the path you want the driver stored
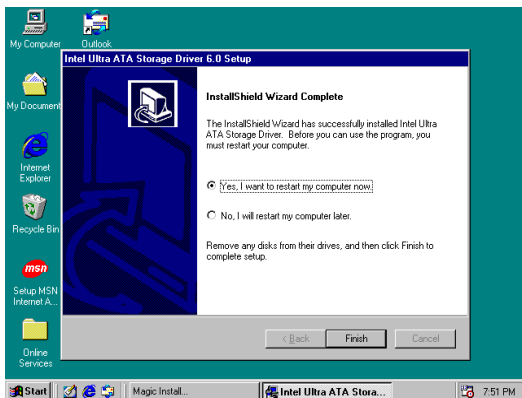
5. Select if you want to re-start your computer and click Finish

6. You may choose to remove the driver or you may remove it at ADD/REMOVE PROGRAMS

NOTE: MAGIC INSTALL will auto detect file path X:\INTEL810\Ide\SETUP.EXE
        This driver supports WINDOWS 95/98/98SE/NT4.0/2000
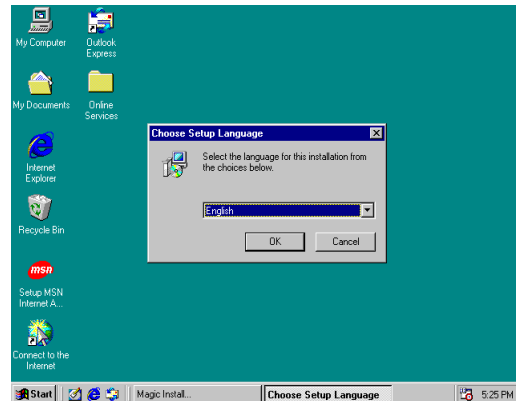
4-3 VGA   install on-board VGA driver

A. For WINDOWS 95/98/98SE/NT4.0
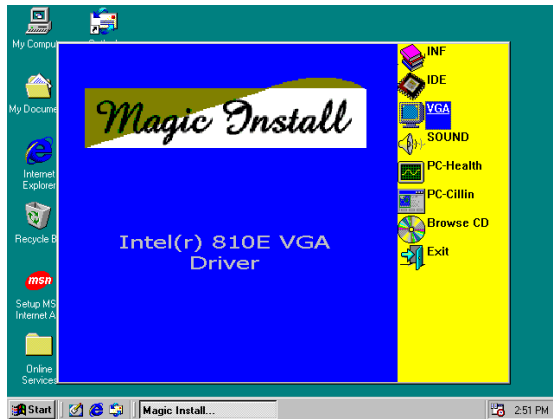
1. Click VGA when MAGIC INSTALL MENU appears

2. Click when INTEL 81X Family Chipset Graphics Driver Software appears
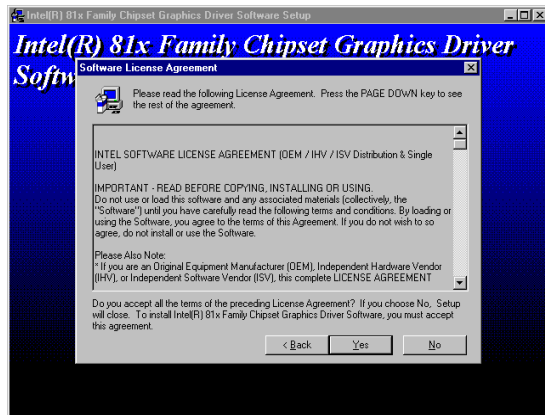
3. Click NEXT, this is to announce Copy Right
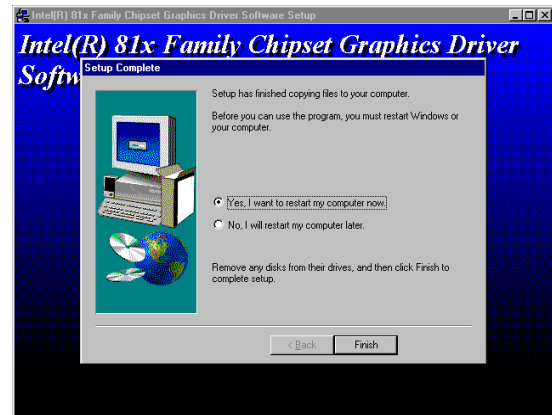
4. Select if you want to re-start computer and click Finish

NOTE: **The path of the file**
for WIN95 is X:\INTEL810\VGA\WIN95\SETUP.EXE
for WIN98 and WIN98SE is X:\INTEL810\VGA\WIN9X\SETUP.EXE
for NT4.0 is X:\INTEL810\VGA\NT40\SETUP.EXE

B. For WINDOWS 2000

Auto detects function for Windows 2000 is not provided, please load the VGA driver as follow:
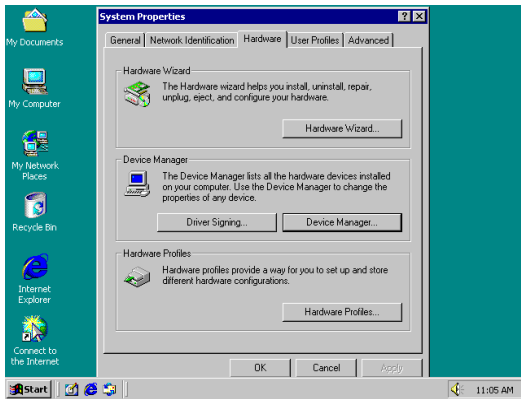
1. When WINDOWS 2000 appears, Double click MY COMPUTER/CONTROL PANEL/ SYSTEM/HARDWARE/ DEVICE MANAGER
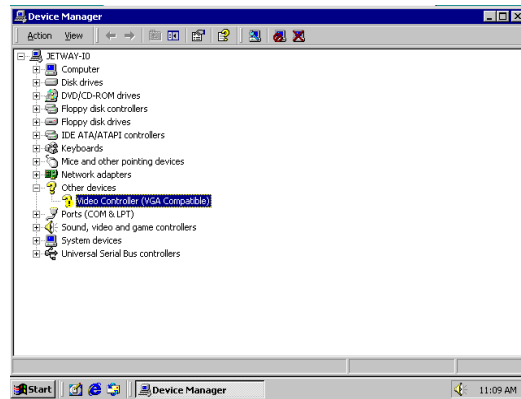
2. Click OTHER DEVICE/VIDEO CONTROLLER (VGA COMPATIBLE)
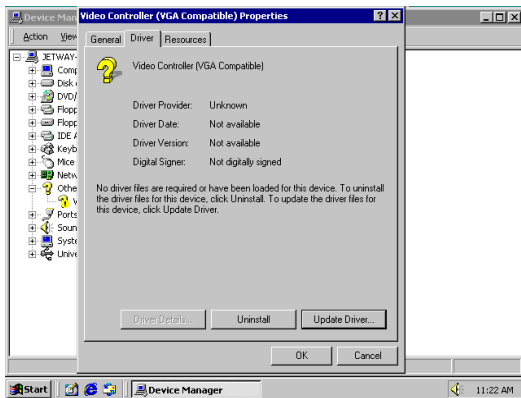
3. Click DRIVER/UPDATE DRIVER
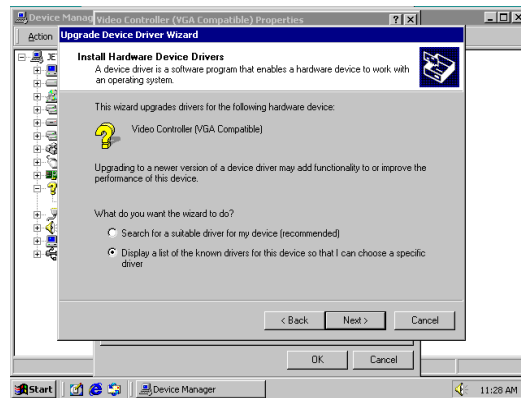
4. Click Next when update driver wizard appears. Then choose DISPLAY A LIST OF THE KNOWN DRIVERS FOR THIS DEVICE SO THAT I CAN CHOOSE A SPECIFIC DRIVER. Then click NEXT

5. Choose DISPLAY ADAPTERS from HARDWARE TYPE then click NEXT
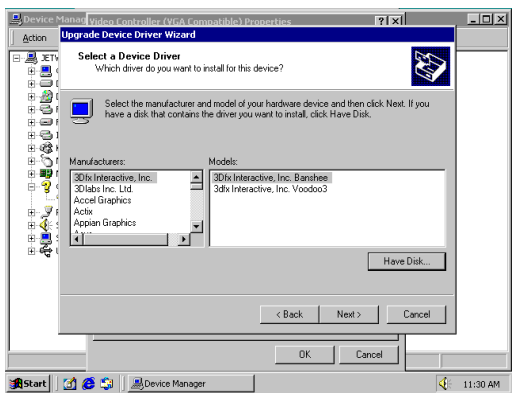
6. Choose HAVE DISK from DEVICE DRIVER
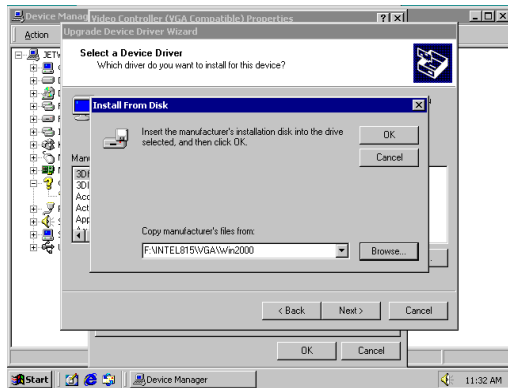
7. When INSTALL FROM DISK appears, type X:\INTEL810\VGA\WIN2000, then click NEXT
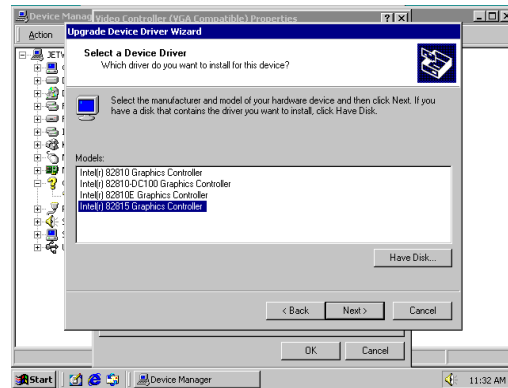
8. Choose INTEL® 82810E GRAPHICS CONTROLLER from DRIVER LIST, then click NEXT. After Installation click NEXT, click FINISH and then Re-start the computer

4-4 PC-HEALTH installs PC HEALTH MONITOR IIII software for hardware monitoring device
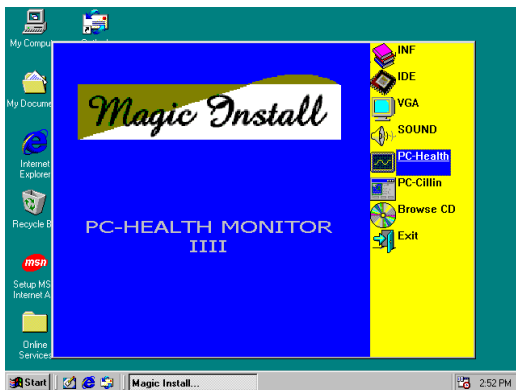
1. Click PC-HEALTH when MAGIC INSTALL MENU appears
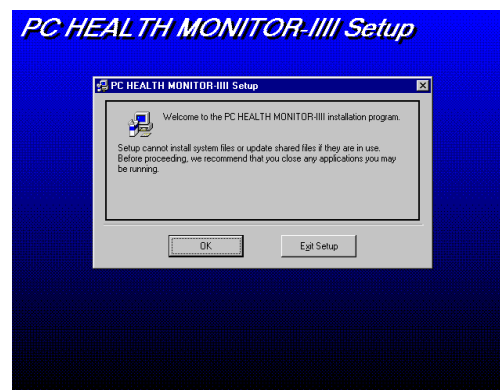
2. Click OK when PC HEALTH MONITOR IIII Setup appears
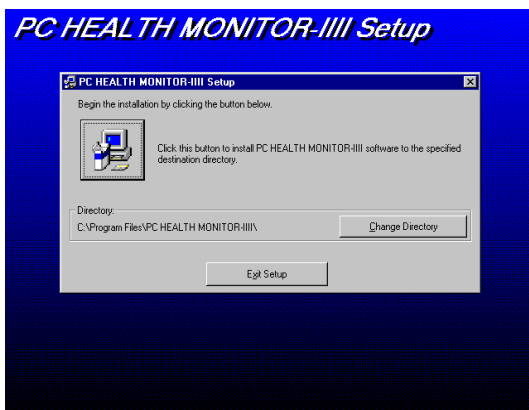
3. Click the Button to start installation
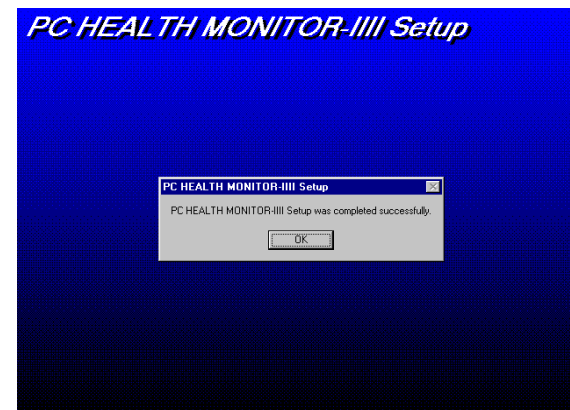
4. Click OK after setup complete

NOTE: MAGIC INSTALL will auto detect file path X:\INTEL810\HEALTH\SETUP.EXE
  This driver supports WINDOWS 95/98/98SE

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4-5 AC97 sound driver and the program Install for editing/playback
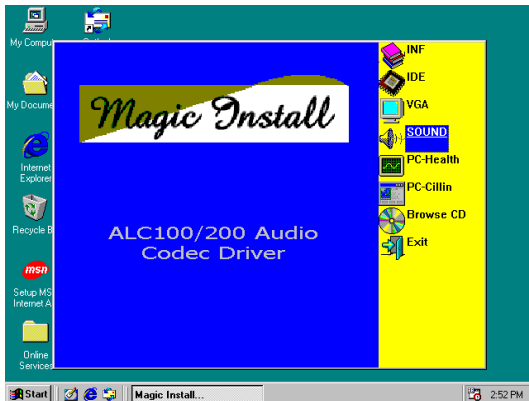
1. Click SOUND when MAGIC INSTALL MENU appears

2. Then auto detect operation system language edition, click OK, start to install DRIVER

3. When ask Remove old device driver, Click OK, Click GO
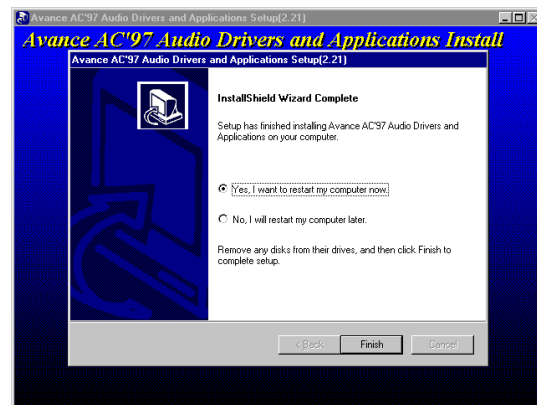
4. Click Finish and Restart Windows
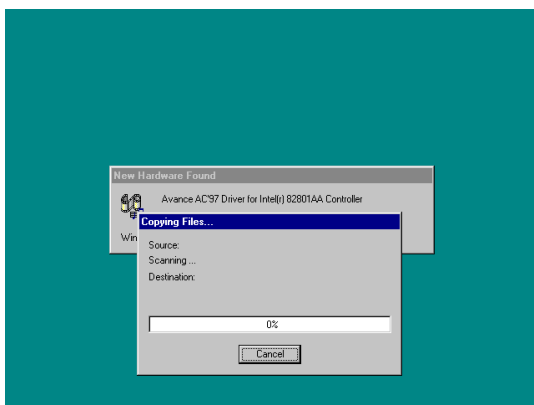
5. Restart Windows will auto detect Avance AC97 Driver for 82801AA Controller Intel® 82801AA controller

NOTE: MAGIC INSTALL will auto detect file path:
          X:\CODEC\ALC200\WIN95\SETUP.EXE (for WINDOWS 95)
          X:\CODEC\ALC200\WIN98\SETUP.EXE (for WINDOWS 98/98SE)
          X:\CODEC\ALC200\WINNT\SETUP.EXE (for WINDOWS NT4.0)

4-6   PC-CILLIN   Install PC-CILLIN 2000 Anti-virus program
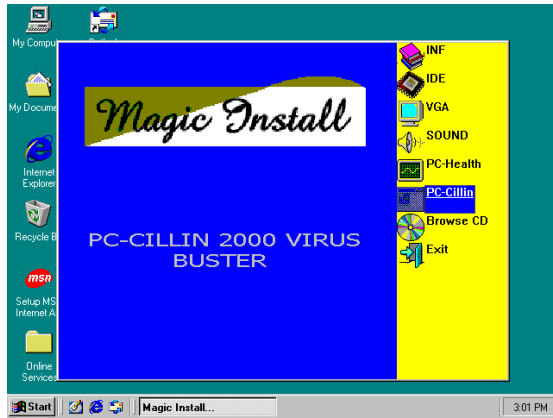
1.   Click PC-CILLIN when MAGIC INSTALL MENU Appears

2.   Click NEXT when PC-CILIN 2000 SETUP APPEARS. Then click YES when the announcement of copywrite appears. Software is starting to detect HD for virus

3.   Click NEXT and Enter User Information, Click NEXT or choose BROWSE to change the path For the file to be stored
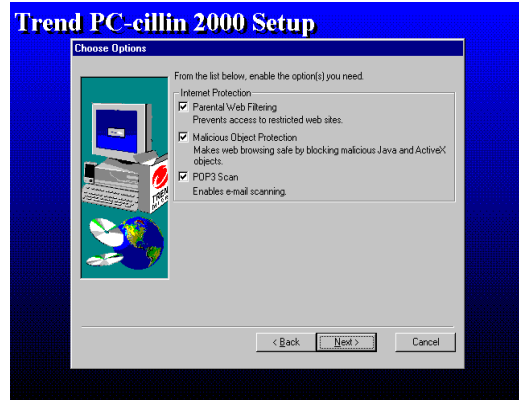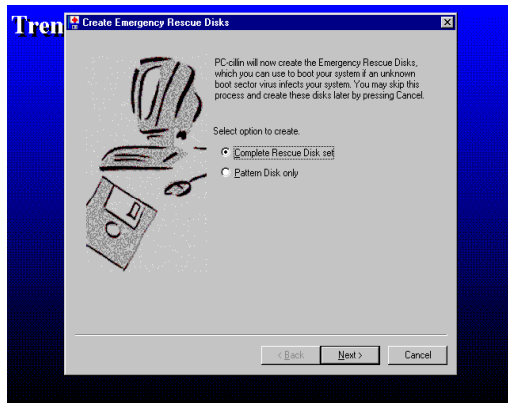
4.   Click NEXT and Choose all Internet Protection
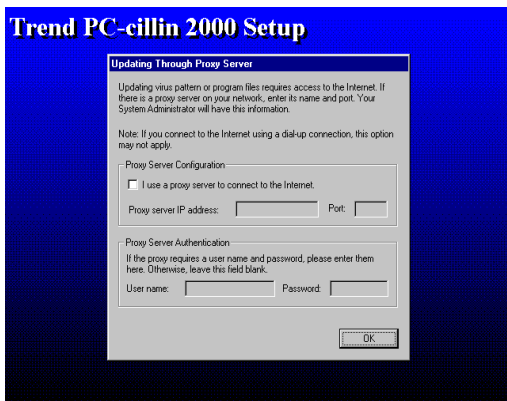
5.   Click OK and If You Have Proxy Server,

6.   Click NEXT when Start Copy Files, Start to
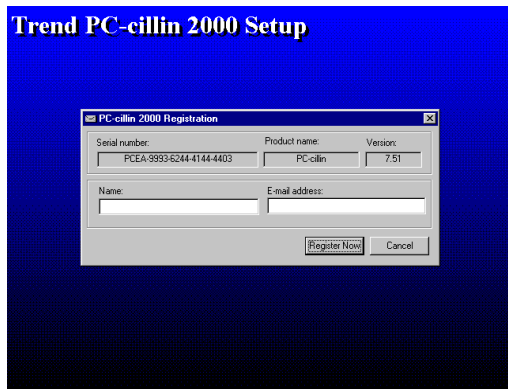
Enter Your Setting.

install the software.
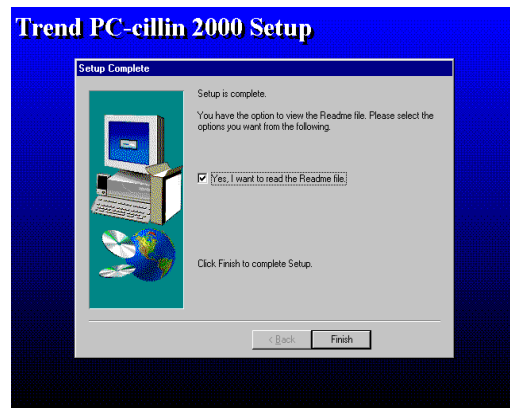
7. If you want to make a rescue disc, insert a 1.44 MB disc

8. Setup Complete and click Finish
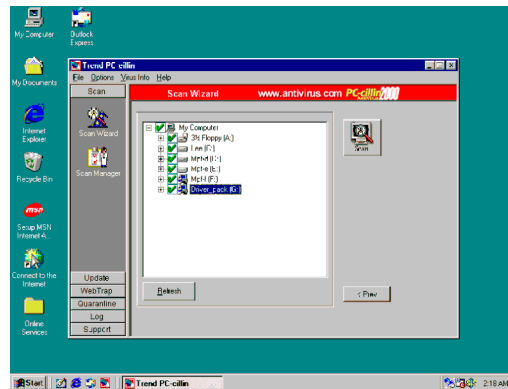
9. Enter Your name and E-mail address Register PC-cillin 2000 or Click Cancel Register Later

10. After install PC-cillin 2000 complete we recommend select update item to download newest virus code and setting Auto refresh virus code

4-7 HOW TO UTILIZE ALSRACK EDITING & PLAYBACK UTILITY
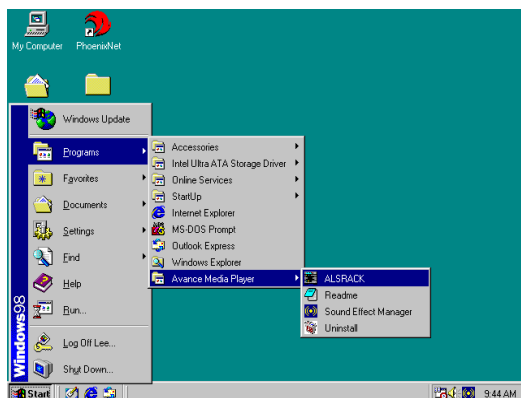
1. Click START/PROGRAMS/AVANCE MEDIA PLAYER/ALSRACK. Then ALSRACK appears

2. This utility it can play from CD the effect just like HI-FI stereo system, also it can play *.WAN, *.MID format file

3. This is a sound environment simulator offering massive simulation including environment of opera pub stadium

KARAOK playing having high low KEY tuning. Also BASS high low eight tune tuning and TREBLE high low eight tune tuning.

PS: After altering the options, there will be changes on the sound effect, user has to reset all the option in order to have the original sound effects.

4-8   HOW TO UTILIZE PC-HEALTH
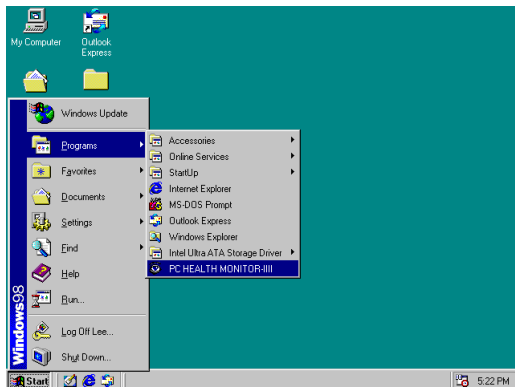
1. Click Program → PC HEALTH MONITOR IIII the PC HEALTH MONITOR IIII utility will appears, You can remove the Utility in Control Panel → Add/Remove Program icon
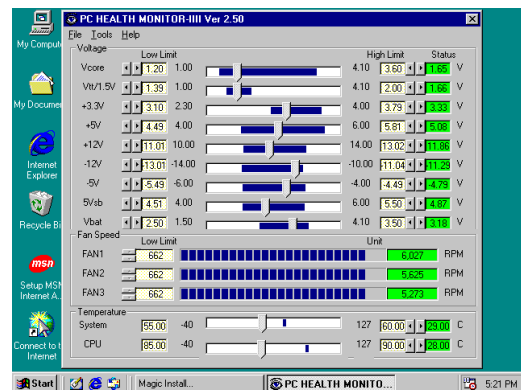
2. After executing PC HEALTH MONITOR IIII it supports system voltage, Fan speed and CPU/SYSTEM Temperature. Because this is a On-time Monitoring program therefore the value will change after it detected, if the value is over default setting the system will have warning picture and beeps

4-9 HOW TO DISABLE ON-BOARD SOUND

Enter BIOS SETUP choose INTEGRATE PERIPHERALS choose ON-CHIP DEVICE FUNCTION choose AC97 AUDIO Disable on-board sound function by press PAGE DOWN KEY to Disable

4-10 HOW TO UPDATE BIOS

STEP 1. Prepare a boot disc. (you may make one by click START click RUN type SYS A: click OK)

STEP 2. Copy utility program to your boot disc. You may copy from DRIVER CD X:\ FLASH\AWDFLASH.EXE or download from our web site.

STEP 3. Copy latest BIOS for IB3 from our web site to your boot disc.

STEP 4. Insert your boot disc into A:,

start the computer, type "Awdflash A:\IB3xxx.BIN /SN/PY/CC/R"

IB3xxx.BIN is the file name of latest BIOS it can be IB3A03.BIN or IB3B02.BIN

SN   means   don't save existing BIOS data
PY   means   renew existing BIOS data
CC   means   clear existing CMOS data
R   means   restart computer

STEP 5. Push ENTER and the BIOS will be updated, computer will be restarted automatically.