740DMP/740DMU/740DMZ USER'S MANUAL

M/B For Socket-A Athlon/Duron Processor

Trademark:

TABLE OF CONTENT

USER'S NOTICE

Manual Revision Information

Reversion	Revision History	Date
1.0	First Release	September 2002

Item Checklist

- ☑ 740DMP/740DMU/740DMZ motherboard
- ☑ Cable for IDE/Floppy
- ☑ CD for motherboard utilities
- ☐ Cable for USB Port 3/4 (Option)
- ☑ 740DMP/740DMU/740DMZ User's Manual

AMD Athlon™ / Duron™ Processor Family
Cooling 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, AMD 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 AMD for use with AMD processors. Note, those heatsinks are recommended for maintaining the specified Maximum T case requirement. In addition, this collection is not intended to be a comprehensive listing of all heatsinks that support AMD processors.

For vendor list of heatsink and fan, please visit：http://www1.amd.com/products/duron/thermals

http://www1.amd.com/products/athlon/thermals

Chapter 1

Introduction of 740DMP/740DMU/740DMZ Motherboard

1-1 Feature of motherboard

The 740DMP/740DMU/740DMZ motherboard is design for use AMD Athlon/ Duron/Athlon XP 200MHz/266MHz (Double Data Rate) Front Side Bus Frequency CPU, which utilize the Socket-A design and the memory size expandable to 2.0GB.

The motherboard use the newest SiS740/962L chipset for 740DMP/740DMU and SiS740/962 for 740DMZ, whose 133MHz/266MHz (Double Data Rate) Front Side Bus frequency and 266MHz memory interface delivers a clear upgrade path to the future generation of 266MHz processors and DDR200/DDR266 DDR SDRAM. These motherboards offer ULTRA ATA **133** to provide speedier HDD throughout that boosts overall system performance.

These motherboards also has an 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.

These motherboards integrated High Performance & High Quality 3D Accelerator supports Ultra-AGPII with 2GB/s bandwidth, built-in MPEG-2/1 Video Decoder and Video Accelerator supports VCD.DVD HDTV decoding and playback, supports graphic and video overlay function. Built-in programmable 24-bit true-color RAMDAC up to 333MHz pixel clock. Programmable frame buffer size from 8MB and up to 64MB.

A special design in hardware for protecting Athlon XP CPU from burned, the system will auto shutdown power supply when CPU is overheat or the CPU FAN is disconnection.

With USB control as well as capability of expanding to 6 USB2.0 function ports meet future USB demand also this motherboard has built-in hardware monitor function. This will monitor and protect your computer. Power Fail Recovery function for system auto power on after power recovery.

The motherboard provides special function in BIOS Setup to setting CPU Host clock step by step increasing let users to approach over clocking.

740DMP/740DMU/740DMZ provides high performance & meets future specification demand. It is really wise choice for your computer.

1-2 Specification

Design	* Micro ATX form factor 4 layers PCB size: 24.5x22.0cm
Chipset	* SiS 740 North Bridge Chipset * SiS 962L MuTIOL Media I/O Chipset (for 740DMP/740DMU) * SiS 962 MuTIOL Media I/O Chipset (for 740DMZ)
CPU Socket	* Support AMD Athlon 700MHz~1.4GHz processor * Support AMD Duron 600MHz~1.3GHz processor * Support AMD Athlon XP1500+~XP2600+ processor * Support 200MHz/266MHz (Double Data Rate) Front Side Bus frequency processors * Reserves support for future AMD Athlon/Duron/Athlon XP processors
Memory Socket	* 184-pin DDR SDRAM module socket x2 * Support 2 pcs DDR266 DDR SDRAM Modules * Expandable to 2.0GB
Expansion Slot & Headers	* 32-bit PCI slot x3
Integrate IDE	* Two PCI IDE controllers support PCI Bus Mastering, ATA PIO/DMA and the ULTRA DMA 66/100/133 functions that deliver the data transfer rate up to 133 MB/s
LAN (for 740DMP/740DMZ)	* SiS On-chip LAN controller * Support full duplex 10/100 Base-T Ethernet
IEEE 1394A (for 740DMZ)	* Compliant with 1394 Open Host Controller interface Specification 1.1, IEEE 1394-1995 and IEEE 1394A-2000 * Bus transfer rate of 100/200/400 Mbits/s supported * Support two 1394 Ports to connect with 1394 devices
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	* PS/2 keyboard and PS/2 mouse connectors * Floppy disk drive connector x1 * Parallel port x1 * Serial port x2 * USB2.0 connector x2, USB2.0 headers x4 * 1394 connector x 2 (only for 740DMZ) * Audio connector (Front, Rear, Center-Base, MIC)

1-3 Performance List

The following performance data list is the testing result of some popular benchmark testing programs. These data are just referred by users, and there is no responsibility for different testing data values gotten by users (the different Hardware & Software configuration will result in different benchmark testing results.)

Performance Test Report

CPU:	AMD Athlon XP 2600+
DRAM:	256MB DDR266 X1 (SAMSUNG DDR K4H280838B-TCB0)
VGA Expansion Card:	On Board VGA share 32MB RAM (1024x768 Hi-color)
Hard Disk Driver:	IBM DTLA-305040 (ATA-100)
BIOS:	Award Optimal default
OS:	Win 98SE

		DDR266
3D Mark 2000		2723
3D Mark 2001SE		1276
3D Winbench 2000		49.1
PC Mark 2002		
CPU/Memory/HDD		5961/2840/1140
Content Creation Winstone 2001		77
Content Creation Winstone 2002		26.8
Business Winstone 2001		64.4
Winbench 99 V1.2:		
Business Disk Winmark99		8090
Hi-end Disk Winmark99		26800
Business Graphic Winmark		598
Hi-end Graphic Winmark		2560
SYS Mark 2000/2001 : SISMark 2000/2001 Rating (Internet Content Creation / Office Productivity)		
SISMark 2000		308 (344/283)
SISMark 2001		200 (208/192)
SISOFT Sandra 2002 :		
Dhrystone ALU	MIPS	5923
Whetstone FPU	MFLOPS	2969
RAM Int Buffered iSSE2	MB/S	1761
RAM Float Buffered iSSE2	MB/S	1658
Integer SSE2	IT/S	11756
Floating- Point SSE2	MB/S	13554
QUAKE3 DEMO1	FPS	60.0
DEMO2	FPS	57.9
Return Castle Wolfenstein	FPS	37.8
WCPUID System/CPU Clock		134.07/2145.12

1-4 Layout Diagram & Jumper Setting

(for 740DMP/740DMZ)

PS/2 Mouse

PS/2 Keyboard

LAN   PRINT   GAME/MIDI PORT

USB   COM1   VGA

MIC

LINE-IN

LINE-OUT

K/B Power ON Jumper **(JP1)**

PS2 KB/Mouse Port

USB Port/
LAN Connector
(for 740DMP/740DMZ)

PC99 Back Panel

ATX Power Conn.

CD Audio

Front Panel Audio

CPU F.S.B. Frequency
Jumper **(JP4)**

PCI Slot

Winbond 83697HF

2MBit Flash ROM BIOS

Keyboard Password Clear
Jumper **(JP7)**

COM2 Port

IR Connector

Wake On LAN

1394 Port
(1394A, 1394B)
(for 740DMZ)

USB Power ON Jumper **(JP2)**

CPU Socket

CPU FAN

DDR Socket X2

Floppy Connector

SIS 740 Chip

SFAN1

USB Port
(USB1, USB2)

ATA 133 IDE Connector
(IDE1, IDE2)

SIS 962L Chip
(for 740DMP/740DMU)
SIS 962 Chip (for 740DMZ)

Clear CMOS **(JP6)**

Front Panel Connector

SYSFAN

Jumpers

Jumper	Name	Description	Page
JP4	CPU Front Side Bus Frequency	2x4-pin Block	P.6

JP6	CMOS RAM Clear	3-pin Block	P.6
JP1	Keyboard Power On Enable/Disabled	3-pin Block	P.7
JP2	USB Device Power On Enabled/Disabled	3-pin Block	P.7
JP7	Keyboard Password Clear	3-pin Block	P.7

Connectors

Connector	Name	Description	Page
ATX_PW	ATX Power Connector	20-pin Block	P.12
KBMS1	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female	P.12
CN1 (USB)	USB Port Connector	4-pin Connector	P.12
LAN (For 740DMP/ 740DMZ)	**LAN Port Connector**	**RJ-45 Connector**	P.12
LPT	Parallel Port Connector	25-pin Female	P.12
JOY1	Audio/Game Connector	3 phone jack + 15-pin Connector	P.12
VGA	VGA Port Connector	15-pin D-Sub Connector	P.12
COM1	Serial Port COM1 Connector	9-pin Connector	P.12
FDD	Floppy Driver Connector	34-pin Block	P.13
IDE1/IDE2	Primary/Secondary IDE Connector	40-pin Block	P.13

Headers

Header	Name	Description	Page
AUDIO	Line-In/Out, MIC header	9-pin Block	P.14
USB1/USB2	USB Port Headers	9-pin Block	P.14
COM2	Serial Port Header	9-pin Block	P.15
1394A/1394B (for 740DMZ)	**1394 Connector Headers**	**9-pin Block**	**P.15**
IDE LED	IDE activity LED	2-pin Block	P.15
RESET	Reset switch lead	2-pin Block	P.15
SPEAK	Speaker connector	4-pin Block	P.15
PWR LED	Power LED	2-pin Block	P.15
PWR BTN	Power switch	2-pin Block	P.15
WOL	Wake On-LAN Headers	3-pin Block	P.16
CPUFAN, SYSFAN, SFAN1	FAN Headers	3-pin Block	P.16
IR	IR infrared module Headers	5-pin Block	P.17
CD_IN	CD Audio-In Headers	4-pin Block	P.17

Expansion Sockets

Socket/Slot	Name	Description	Page
ZIF Socket 462	CPU Socket	462-pin PPGA CPU Socket	P.8
DDR1, DDR2	DDR SDRAM Module Socket	184-pin DDR SDRAM Module Expansion Socket	P.9
PCI1, PCI2, PCI3	PCI Slot	32-bit PCI Local Bus Expansion slots	P.10

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 Front Side Bus Frequency Setting (2x4-pin) : JP4

JP4	1-2	3-4	5-6	7-8
100/100	ON	OFF	OFF	OFF
100/133	OFF	ON	ON	OFF
133/133	ON	ON	OFF	OFF
133/166	ON	OFF	ON	ON

CPU F.S.B. Frequency Setting
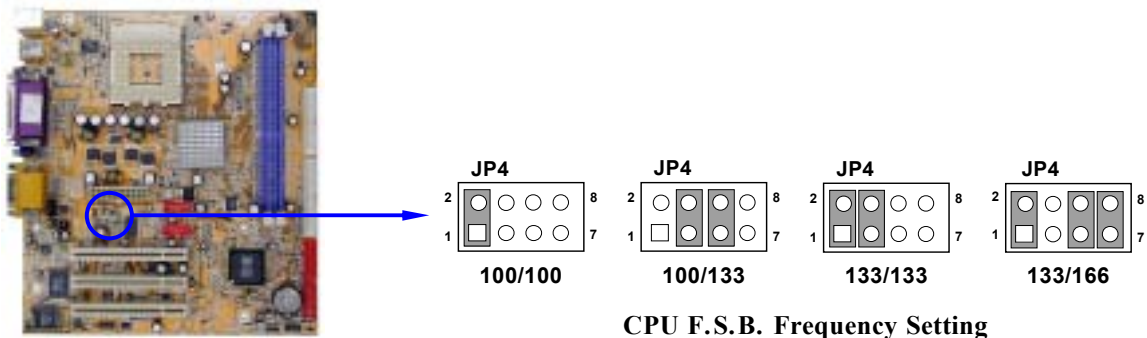
Note: CPU Front Side Bus Frequency also can setting step by step in BIOS SETUP, please refer page 33 Miscellaneous Control in Host Clock at Next.

2. CMOS RAM Clear (3-pin) : JP6
A battery must be used to retain the motherboard configuration in CMOS RAM short 2-3 pins of JP6 to store the CMOS data.

To clear the CMOS, follow the procedure below:
1. Turn off the system and unplug the AC power
2. Remove ATX power cable from ATX power connector
3. Locate JP6 and short pins 1-2 for a few seconds
4. Return JP6 to its normal setting by shorting pins 2-3
5. Connect ATX power cable back to ATX power connector

Note: When should clear CMOS
1. Troubleshooting
2. Forget password

3. After over clocking system boot fail

JP6   **1-2 closed   Clear CMOS**   JP6   **2-3 closed   Normal (Default)**

CMOS RAM Clear Setting
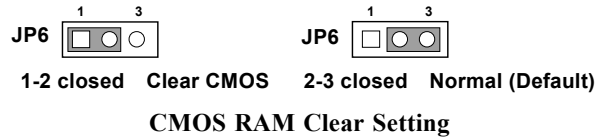
3. Keyboard/USB Device Power On function Enabled/Disabled: JP1/JP2
When setting Enabled you can using keyboard by key in password to power on system, or by USB Device to power on system.

JP1 JP2   JP1 JP2

**1-2 closed   Keyboard/USB Device
Power ON Disable (Default)**   **2-3 closed   Keyboard/USB Device
Power ON Enabled**

Keyboard/USB Device Power On Setting
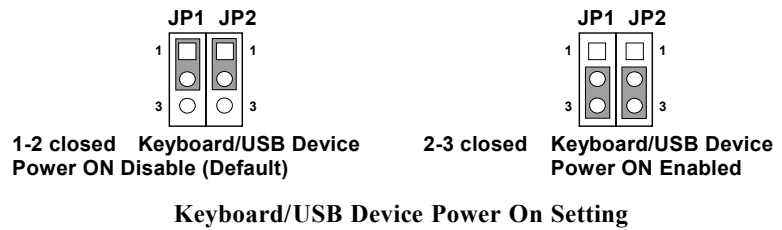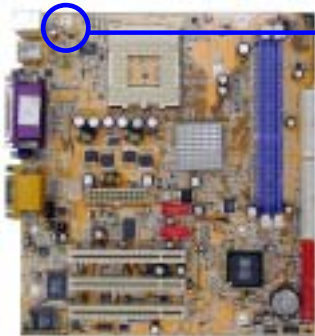
4. Keyboard Password Clear Header (3-pin): JP7

JP7   **1-2 closed   Clear Keyboard Password**   JP7   **2-3 closed   Normal**

Keyboard Password Clear Setting

2-3 Install CPU

2-3-1 Glossary

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

Processor slot/socket - the slot or 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.

ISA - **I**ndustry **S**tandard **A**rchitecture - a relatively low speed interface primarily used for sound cards and modems; runs at approx. 8MHz.

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, 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.

LAN (interface) - **L**ocal **A**rea **N**etwork - the interface to your local area network.

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 Athlon CPU has 256K or above, while Duron will have 64K.

2-3-2 About AMD Athlon & Duron 462-pin CPU

This motherboard supports Socket-A (Socket-462) AMD Athlon/Duron processors.

This motherboard Provides a ZIF Socket-A. 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.

WARNING!	Due to this motherboard provides new function of protecting CPU；you must connect the CPU FAN connector on FAN1 location in order to obtain this feature. Without connection on FAN1 (or you have connect CPU FAN on FAN2), the system will shut down immediately to protect both your CPU and motherboard.

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.

Socket-A

Colden Arrow

AMD®
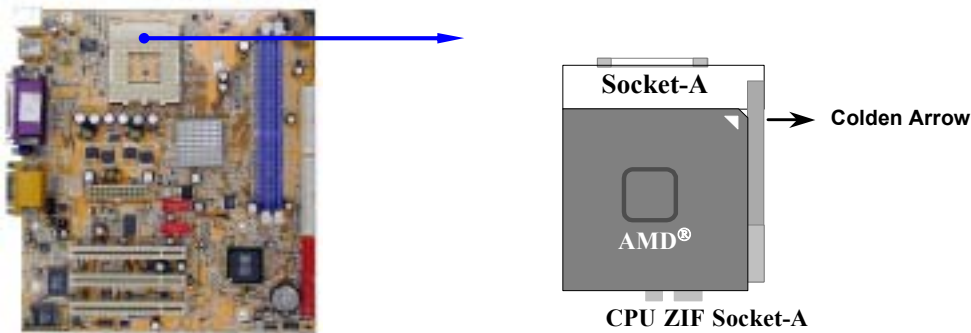
CPU ZIF Socket-A

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

2-4 Install Memory

This motherboard provides two 184-pin DUAL INLINE MEMORY MODULES (DIMM) sites for memory expansion available from minimum memory size of 64MB to maximum memory size of 2.0GB DDR SDRAM.

Valid Memory Configurations

Bank	184-Pin DIMM		Total Memory
Bank 0, 1 (DDR1)	DDR200/DDR266 DDR SDRAM	X1	64MB~1.0GB
Bank 2, 3 (DDR2)	DDR200/DDR266 DDR SDRAM	X1	64MB~1.0GB
Total	System Memory (Max. 2.0GB)	2	64MB~2.0GB

NOTE!	Make sure the total installed memory does not exceeds 2.0GB, otherwise the system may hang during startup.

Generally, installing DDR SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 184-Pin DDR200/DDR266 DDR SDRAM module looks like.
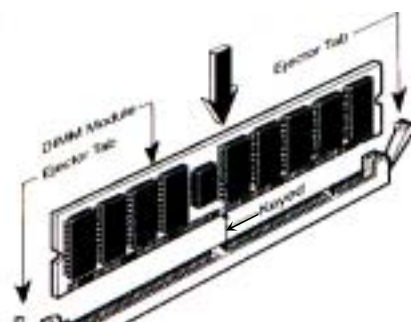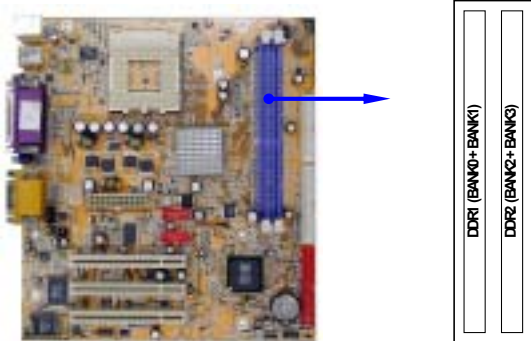
NOTE!	When you install DIMM module fully into the DIMM socket the eject tab should be locked into the DIMM module very firmly and fit into its indention on both sides.
WARNING!	For the DDR SDRAM CLOCK is set at 133MHz, use only DDR266-compliant DDR Modules. When this motherboard operate at 133MHz, most system will not even boot if non-compliant modules are used because of the strict timing issues, if your DDR Modules are not DDR266-compliant, set the DDR SDRAM clock to 100MHz to ensure system stability.

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	N/A	System Timer
1	N/A	Keyboard Controller

2	N/A	Programmable Interrupt
3 *	8	Communications Port (COM2)
4 *	9	Communications Port (COM1)
5 *	6	Sound Card (sometimes LPT2)
6 *	11	Floppy Disk Controller
7 *	7	Printer Port (LPT1)
8	N/A	System CMOS/Real Time Clock
9 *	10	ACPI Mode when enabled
10 *	3	IRQ Holder for PCI Steering
11 *	2	IRQ Holder for PCI Steering
12 *	4	PS/2 Compatible Mouse Port
13	N/A	Numeric Data Processor
14 *	5	Primary IDE Channel
15 *	1	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
PCI slot 1	Shared	—	—	—
PCI slot 2	—	Shared	—	—
PCI slot 3	—	—	Shared	—
AGP slot	Shared	—	—	—
AC97/MC97	—	—	Shared	—
Onboard USB	—	—	—	Shared
Onboard USB 1	—	—	—	Shared

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

2-6-1 Connectors

(1)   Power Connector (20-pin block) : ATX_POW

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 1 →
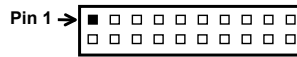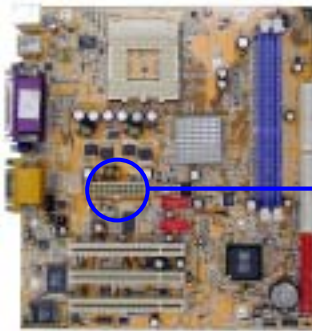
PIN	ROW2	ROW1
1	3.3V	3.3V
2	-12V	3.3V
3	GND	GND
4	Soft Power On	5V
5	GND	GND
6	GND	5V
7	GND	GND
8	-5V	Power OK
9	+5V	+5V (for Soft Logic)
10	+5V	+12V

(2)   PS/2 Mouse & PS/2 Keyboard Connector: KBMS1
The connectors for PS/2 keyboard and PS/2 Mouse.

(3)   USB Port connector: USB
The connectors are 4-pin connector that connect USB devices to the system board.

(4)   LAN Port connector: LAN (only for 740DMP/740DMZ)
This connector is standard RJ45 connector for Network

(5)   Parallel Port Connector (25-pin female): LPT
Parallel Port connector is a 25-pin D-Subminiature Receptacle connector. The On-board Parallel Port can be disabled through the BIOS SETUP. Please refer to Chapter 3 "INTEGRATED PERIPHERALS SETUP" section for more detail information.

(6)   Audio and Game Connector : JOY1 (AUD_GAME)
This Connector are 3 phone Jack for LINE-OUT, LINE-IN, MIC and a 15-pin D-Subminiature Receptacle Connector for joystick/MIDI Device.
Line-out :   Audio output to speaker
Line-in :   Audio input to sound chip
MIC :   Microphone Connector
Game/MIDI :   For joystick or MIDI Device

(7)   VGA Port Connector: VGA
VGA connector is the 15-pin D-Subminiature female connector for connection Display Monitor

(8)   Serial Port COM1 : COM1
COM1 is the 9-pin D-Subminiature mail connector. The On-board serial port can be disabled through BIOS SETUP. Please refer to Chapter 3 "INTEGRATED PERIPHERALS SETUP" section for more detail information.

PS/2 Mouse   LAN   PRINT   GAME/MIDI PORT

PS/2   USB   COM1   VGA   MIC
Keyboard   LINE-IN
                                                    LINE-OUT
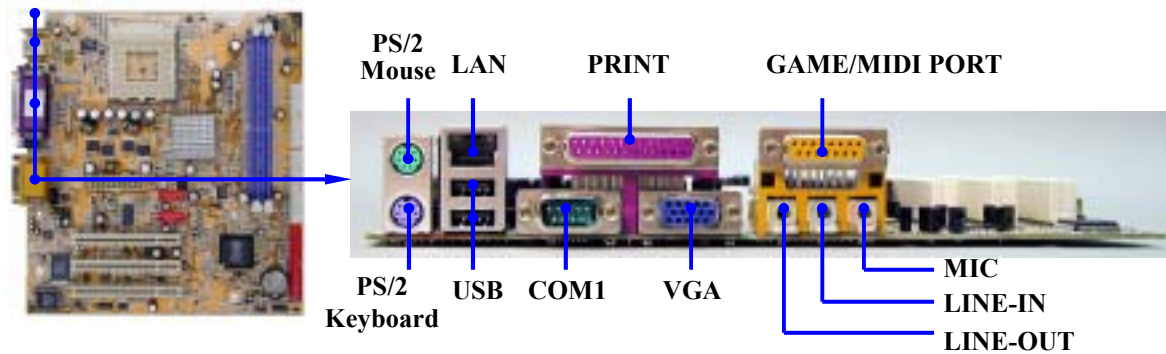
(9) Floppy drive Connector (34-pin block): FDD

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.

→ Pin 1

Floppy Drive Connector
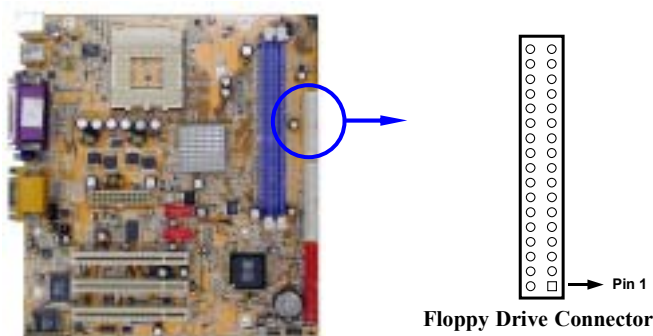
(10) Primary IDE Connector (40-pin block): IDE1

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.

IDE1

Pin 1

Primary IDE Connector
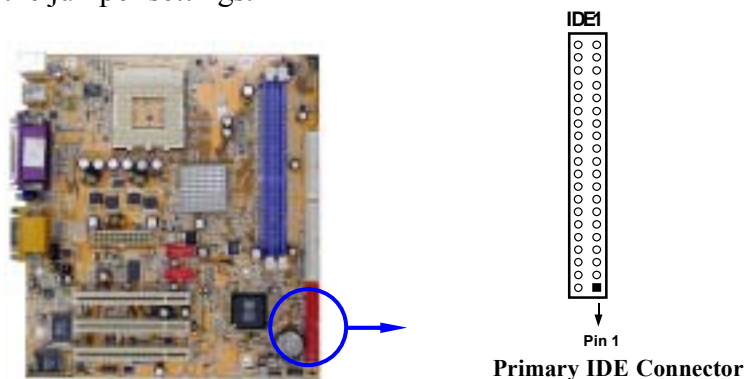
(11) Secondary IDE Connector (40-pin block): IDE2

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.

IDE2

Pin 1
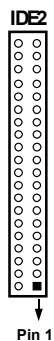
Secondary IDE Connector

- Two hard disks can be connected to each connector. The first HDD is referred to as the "Master" and the second HDD is referred to as the "Slave".
- For performance issues, we strongly suggest you don't install a CD-ROM or DVD-ROM drive on the same IDE channel as a hard disk. Otherwise, the system performance on this channel may drop.

2-6-2 Headers

(1) Line-In/Out, MIC Header (9-pin): AUDIO

This header connect to Front Panel Line-In, Line-out, MIC connector with cable.

AUDIO

AUD-GND
AUD-VCC
AUD-RET-R
AUD-RET-L

2   10
Pin1 →   9

AUD-MIC
AUD-MIC BIAS
AUD-FPOUT-R
HP-ON
AUD-FPOUT-L
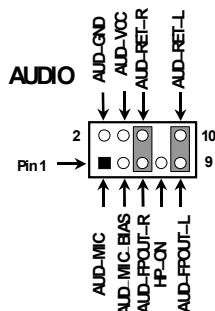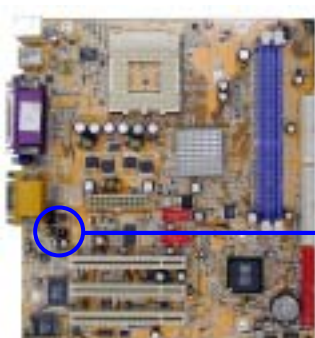
Line-In/Out, MIC Headers

(2) USB Port Headers (9-pin) : USB1/USB2

The header is used for connecting the additional USB port plug. By attaching an option USB cable, your can be provided with two additional USB plugs affixed to the back panel.

USB1

VCC
-DATA
+DATA
GND
CC

Pin1 →

VCC
-DATA
+DATA
GND

USB Port Headers

USB2

VCC
-DATA
+DATA
GND
CC

Pin1 →

VCC
-DATA
+DATA
GND
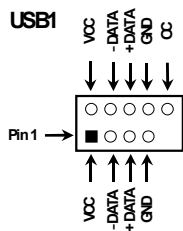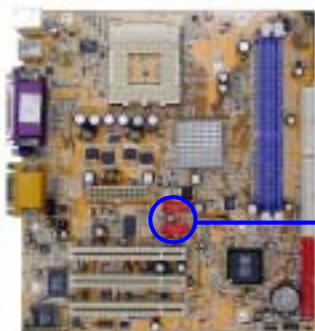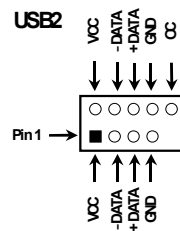
USB Port Headers

(3) **Serial Port2 COM2 Header (9-pin) : COM2**
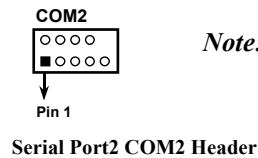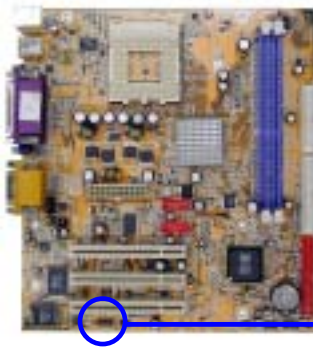
COM2

Note: *Orient the read marking on the*
COM2 ribbon cable to pin 1

Pin 1

Serial Port2 COM2 Header

(4) **1394 Connector Header (9-pin): 1394A, 1394B (for 740DMZ)**

TPA− GND TPB− VCC GND   TPA− GND TPB− VCC GND

1394A   ○ ○ ○ ○ ○   **1394B**   ○ ○ ○ ○ ○
Pin1 →   ■ ○ ○ ○   Pin1 →   ■ ○ ○ ○

TPA+ GND TPB+ VCC   TPA+ GND TPB+ VCC

1394 Connector Headers
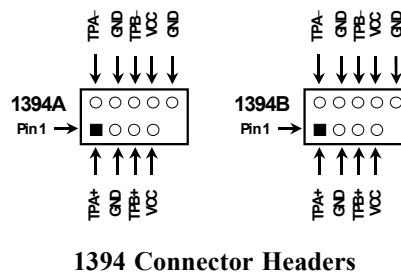
(5) **IDE Activity LED: IDE LED**
This connector connects to the hard disk activity indicator light on the case.

(6) **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 lift of the system's power supply. See the figure below.

(7) **Speaker connector: SPEAK**
This 4-pin connector connects to the case-mounted speaker. See the figure below.

(8) **Power LED: PWR LED**
The Power LED is light on while the system power is on. Connect the Power LED from the system case to this pin.

(9) **Power switch: PWR BTN**
This 2-pin connector connects to the case-mounted power switch to power ON/OFF the system.

ACPILED PWRBT

VCC5 ACPILED PWRBTN GND

JW_FP1

SPEAK

Pin1 → □ ○ ○ ○

SPKR NC GND VCC5

Pin1 → □ ○ ○ ○ ○

VCC5 HDDLED GND RSTSW NC

HDLED RESET
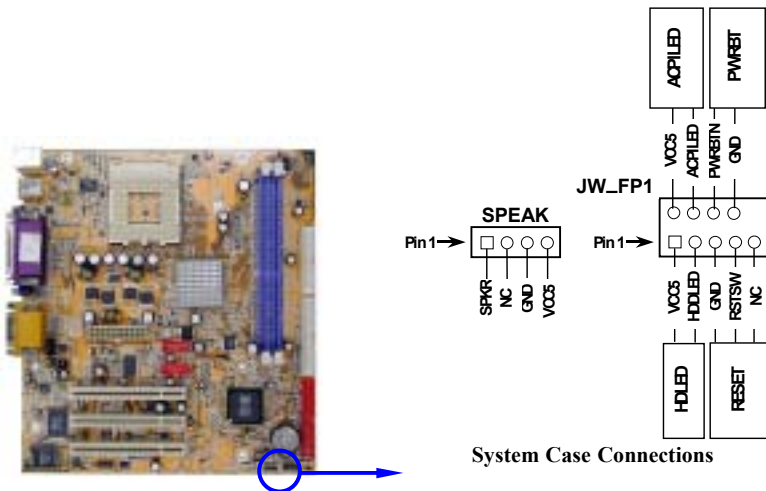
System Case Connections

(10) Wake On-LAN Headers (3-pin) : WOL

This connector connects to a LAN card with a WAKE ON-LAN output. This connector power up the system when a wake up signal is received through the LAN card.

> **NOTE:**   This feature requires that Wake On LAN or Ring In Wake up is enabled.

5VSB GND WOL

WOL □ ○ ○

1   3
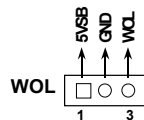
Wake-On-LAN Headers

(11) FAN Speed Headers (3-pin) : CPUFAN, SYSFAN, SFAN1

These connectors support cooling fans of 350mA (4.2 Watts) or less, depending on the fan manufacturer, the wire and plug may be different. The red wire should be positive, while the black should be ground. Connect the fan's plug to the board taking into consideration the polarity of connector.

1   3

CPUFAN □ ○ ○

SFAN1 □ 1
        ○
        ○ 3

1   3

SYSFAN □ ○ ○
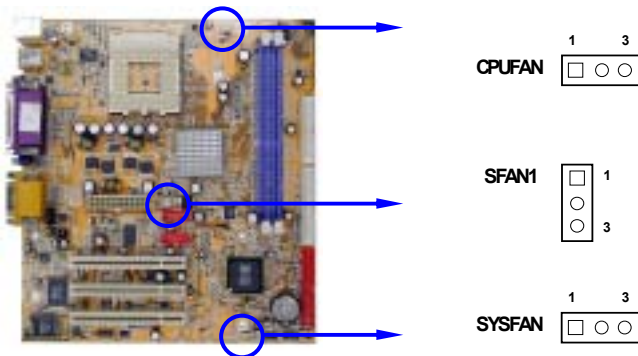
(12) IR infrared module Headers (5-pin) : IR

This connector supports the optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.
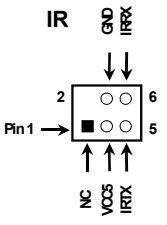
IR infrared module Headers

(13) CD Audio-In Headers (4-pin) : CD_IN

CDIN is the connector for CD-Audio Input signal. Please connect it to CD-ROM CD-Audio output connector.
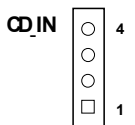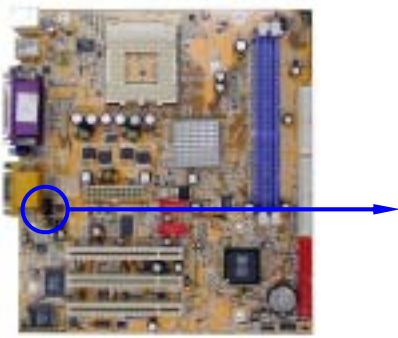
CD Audio-In Headers

2-7 Starting Up Your Computer

1. After all connection are made, close your computer case cover.

2. Be sure all the switch are off, and check that the power supply input voltage is set to proper position, usually in-put voltage is 220V~240V or 110V~120V depending on your country's voltage used.

3. Connect the power supply cord into the power supply located on the back of your system case according to your system user's manual.

4. Turn on your peripheral as following order:

   a. Your monitor.
   b. Other external peripheral (Printer, Scanner, External Modem etc…)
   c. Your system power. For ATX power supplies, you need to turn on the power supply and press the ATX power switch on the front side of the case.

5. The power LED on the front panel of the system case will light. The LED on the monitor may light up or switch between orange and green after the system is on. If it complies with green standards or if it is has a power standby feature. The system will then run power-on test. While the test are running, the BIOS will alarm beeps or additional message will appear on the screen.

   If you do not see any thing within 30 seconds from the time you turn on the power. The system may have failed on power-on test. Recheck your jumper settings and connections or call your retailer for assistance.

Beep	Meaning
One short beep when displaying logo	No error during POST
Long beeps in an endless loop	No DRAM install or detected
One long beep followed by three short beeps	Video card not found or video card memory bad
High frequency beeps when system is working	CPU overheated System running at a lower frequency

6. During power-on, press <Delete> key to enter BIOS setup. Follow the instructions in BIOS SETUP.

7. **Power off your computer:** You must first exit or shut down your operating system before switch off the power switch. For ATX power supply, you can press ATX power switching after exiting or shutting down your operating system. If you use Windows 9X, click **"Start"** button, click **"Shut down"** and then click **"Shut down the computer?"** The power supply should turn off after windows shut down.

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) 1984-2002 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) 1984-2002 Award Software

                                 Standard CMOS Features
 ┌───────────────────────────────────────────────────────┬─────────────────────────┐
 │    Date (mm:dd:yy)         Tue, Sep, 10 2002           │                         │
 │    Time (hh:mm:ss)         14 : 22 : 32                │        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, month, │
 │                                                        │  year and century       │
 │    Drive A                 1.44M, 3.25 in.             │                         │
 │    Drive B                 None                        │                         │
 │                                                        │                         │
 │    Video                   EGA/VGA                     │                         │
 │    Halt On                 All,But Keyboard            │                         │
 │                                                        │                         │
 │    Base Memory                 640K                    │                         │
 │    Extended Memory           56320K                    │                         │
 │    Total Memory              57344K                    │                         │
 ├───────────────────────────────────────────────────────┴─────────────────────────┤
 │   ↑↓→←  Move Enter:Select +/-/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) 1984-2002 Award Software
                            Advanced BIOS Features
  ┌─────────────────────────────────────────────────┬──────────────────────┐
  │  Anti-Virus Protection        Disabled           │                      │
  │  CPU L1 Cache                 Enabled            │      Item Help        │
  │  CPU L2 Cache                 Enabled            ├──────────────────────┤
  │  Quick Power On Self Test     Enabled            │                      │
  │  First Boot Device            Floppy             │   Menu Level >        │
  │  Second Boot Device           HDD-0              │                      │
  │  Third Boot Device            CDROM              │                      │
  │  Boot other Device            Enabled            │                      │
  │  Swap Floppy Drive            Disabled           │                      │
  │  Boot Up Floppy Seek          Enabled            │                      │
  │  Boot Up NumLock Status       On                 │                      │
  │  Gate A20 Option              Fast               │                      │
  │  Typematic Rate Setting       Disabled           │                      │
  │  Typematic Rate (Chars/Sec)   6                  │                      │
  │  Typematic Delay (Msec)       250                │                      │
  │  Security Option              Setup              │                      │
  │  OS Select For DRAM > 64MB    Non-OS2            │                      │
  │  HDD S.M.A.R.T. Capability    Disabled           │                      │
  │  Report No FDD For Windows    Yes                │                      │
  │  Video BIOS Shadow            Enabled            │                      │
  ├─────────────────────────────────────────────────┴──────────────────────┤
  │  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help│
  │     F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults   │
  └─────────────────────────────────────────────────────────────────────────┘
```

Anti-Virus Protection

Allows 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).

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, LAD 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®.

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) 1984-2002 Award Software
                            Advanced Chipset Features
 ┌──────────────────────────────────────────────┬─────────────────────────┐
 │ > DRAM Timing Settings        Press Enter     │                         │
 │   System BIOS Cacheable       Disabled        │       Item Help         │
 │   Video RAM Cacheable         Disabled        │                         │
 │   Memory Hole at 15M-16M      Disabled        │  Menu Level >           │
 │   AGP Aperture Size           64MB            │                         │
 │   System Share Memory Size    32MB            │                         │
 │                                               │                         │
 ├──────────────────────────────────────────────┴─────────────────────────┤
 │  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
 │      F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults  │
 └──────────────────────────────────────────────────────────────────────────┘
```

DRAM Timing Settings
Please refer to section 3-6-1

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 RAM 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.

System Share Memory Size
This item can let users choose onboard VGA Memory Size from 8MB to 64MB, Default setting is 32MB.

3-6-1 DRAM Timing Settings

```
         CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                           DRAM Timing Settings
┌──────────────────────────────────────────────────────────────────────┐
│  Auto Configuration       Optimized        │                          │
│  RAS Active Time          6T                │        Item Help         │
│  RAS Precharge Time       3T                │                          │
│  RAS to CAS Delay         3T                │   Menu Level >>          │
│  SDRAM CAS Latency        2.5T              │                          │
│                                             │                          │
│                                             │                          │
│                                             │                          │
│                                             │                          │
├──────────────────────────────────────────────────────────────────────┤
│  ↑↓→←  Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
│     F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults │
└──────────────────────────────────────────────────────────────────────┘
```

RAS Active Time
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: 2T and 3T.

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: 2T and 3T.

SDRAM CAS Latency

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. The settings are: 2T and 2.5T.

3-7 Integrated Peripherals

```
               CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                            Integrated Peripherals
 ┌──────────────────────────────────────────────┬─────────────────────────┐
 │ > OnChip IDE Function          Press Enter     │        Item Help         │
 │ > OnChip Device Function       Press Enter     │                          │
 │ > Onboard Super IO Function    Press Enter     ├─────────────────────────┤
 │   Init Display First           PCI Slot        │   Menu Level >           │
 │                                                │                          │
 │                                                │                          │
 │                                                │                          │
 │                                                │                          │
 ├────────────────────────────────────────────────────────────────────────┤
 │  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
 │       F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults  │
 └────────────────────────────────────────────────────────────────────────┘
```

OnChip IDE Function

Please refer to section 3-7-1

OnChip Device Function

Please refer to section 3-7-2

Onboard Super IO Function

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 OnChip IDE Function

```
               CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                             OnChip IDE Function
 ┌────────────────────────────────────────────────┬─────────────────────────┐
 │   Internal PCI/IDE            Both              │        Item Help         │
 │   Primary Master   PIO        Auto             │                          │
```

```
   Primary Slave    PIO              Auto
   Secondary Master PIO              Auto            Menu Level >>
   Secondary Slave  PIO              Auto
   Primary Master   Ultra DMA        Auto
   Primary Slave    Ultra DMA        Auto
   Secondary Master Ultra DMA        Auto
   Secondary Slave  Ultra DMA        Auto
   IDE DMA Transfer Access        Enabled
   IDE Burst Mode                 Enabled
   IDE HDD Block Mode             Enabled
   Delay For HDD (Secs)              0


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

Internal 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: Disabled, Primary, Secondary, Both.

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.

Primary/Secondary Master/Slave Ultra DMA

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 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 OnChip Device Function

```
        CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                      OnChip Device Function

   AC97 Sound Device           Auto
   Game Port Address           201              Item Help
```

```
      Midi Port Address           Disabled
      Midi Port IRQ               10                      Menu Level >>
      AC97 Modem Device           Auto
      1394 Controller             Disabled          →(for 740DMZ)
      USB Host Controller         Enabled
      USB Keyboard Legacy Support Disabled
      ETHERNET Function           Enabled
      ETHERNET Address ID Input   Press Enter       →(for 740DMP/740DMZ)
      Current ETHERNET Address is 003018-xxxxxx



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

AC97 Sound Device

This item allows you to decide to enable/disable the SIS740 chipset family to support AC97 Audio. The settings are: Enabled, Disabled.

Game Port Address/Midi Port Address

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

AC97 Modem Device

This item allows you to decide to enable/disable the SIS740 chipset family to support AC97 Modem. The settings are: Auto, Disabled.

USB Host Controller

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

3-7-3 Onboard Super IO Function

```
            CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                          Onboard Super IO Function

      Onboard FDD Controller      Enabled              Item Help
      Onboard Serial Port 1       3F8/IRQ4
      Onboard Serial Port 2       2F8/IRQ3
      UART Mode Select            Normal           Menu Level >>
      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
```

Onboard FDD 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

Parallel Port 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.

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) 1984-2002 Award Software
                  Power Management Setup
```

```
   ACPI Function                 Enabled              Item Help
   Video Off Option              Always Off
   Video off Method              V/H SYNC+Blank
   MODEM Use IRQ                 NA                 Menu Level >
   Hot Key Function as           Power Off
   Power Button Function         Instant Off
 > PM Wake Up Events             Press Enter




 ↑↓→← Move Enter:Select +/-/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.

Video Off Option

This determines the manner in which the monitor is blanked. The choice are Suspend $\rightarrow$ off, All Modes $\rightarrow$ 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.

Power Button Function

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.

PM Wake Up Events

Please refer to section 3-8-1

3-8-1 PM Wake up Events

```
          CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                           PM Wake Up Events

   IRQ [3-7,9-15],NMI            Enabled              Item Help
   IRQ 8 Break Suspend           Disabled
```

```
     Ring Power Up Control          Disabled
     MACPME Power Up Control         Disabled        Menu Level >>
     PCIPME Power Up Control         Disabled
     KB Power On Password            Enter
     Power Up by Alarm               Disabled
   x Month Alarm                     NA
   x Day of Month Alarm              NA
   x Time (hh:mm:ss) Alarm           0 : 0 : 0


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

Ring/MACPME/PCIPME Power Up Control

During Disabled, the system will ignore any incoming call from the Modem/LAN/PCI Devices. During Enabled, the system will boot up if there's an incoming call from the devices.

Power Up 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.

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) 1984-2002 Award Software
                        PnP/PCI Configurations

   Reset Configuration Data       Disabled            Item Help
   Resources Controlled By        Manual
 x IRQ Resources                  Press Enter
   PCI/VGA Palette Snoop          Disabled         Menu Level >
   Assign IRQ For VGA             Enabled
   Assign IRQ For USB             Enabled










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

Reset Configuration Data

Normally, you leave this field 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 operating system can not boot. The settings are: Enabled and Disabled.

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.

Please refer to section 3-9-1

PCI/VGA Palette Snoop

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

3-9-1 IRQ Resources

```
          CMOS Setup Utility – Copyright(C) 1984-2002 Award Software

                              IRQ Resources

    IRQ3    assigned to       PCI Device
    IRQ4    assigned to       PCI Device          Item Help
    IRQ5    assigned to       PCI Device
    IRQ7    assigned to       PCI Device
    IRQ9    assigned to       PCI Device       Menu Level >>
    IRQ10   assigned to       PCI Device
    IRQ11   assigned to       PCI Device
    IRQ12   assigned to       PCI Device
    IRQ14   assigned to       PCI Device
    IRQ15   assigned to       PCI Device

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

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) 1984-2002 Award Software

                            PC Health Status

    Shutdown Temperature        Disabled
    Show PC Health in Post      Enabled              Item Help
```

```
         Detect CPUFAN in Post           Enabled
         Current System Temperature      25°C             Menu Level >
         Current CPU Temperature         38°C
         Current CPUFAN Speed            5000 rpm
         Current SYSFAN Speed            5000 rpm
         Vcore                           1.78V
         Vcc3.3                          3.31V
         + 5V                            4.98V
         +12V                            12.22V
         -12V                            -12.36V
         VBAT(V)                         3.21V
         5VSB(V)                         5.02V

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

Shutdown Temperature

This item can let users setting the Shutdown temperature, when CPU temperature over this setting the system will auto shutdown to protect CPU.

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/ Vdd/3.3V/+5V/+12V/-12V/VBAT(V)/5VSB(V)

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

Detect CPUFAN in Post

During Enabled, system will warn the user if CPU Fan is not functioning.

3-11 Miscellaneous Control

This section is for setting CPU Frequency/Voltage Control.

```
             CMOS Setup Utility – Copyright(C) 1984-2002 Award Software
                             Miscellaneous Control

         Auto Detect DIMM/PCI Clk        Enabled
         Spread Spectrum                 Disabled              Item Help
         Clock Control                   133MHz
         ** Current Host Clock is        133MHz
         Host Clock at Next Boot is      133MHz            Menu Level >
         ** Current DRAM Clock is        133MHz
         DRAM Clock at next Boot is      133MHz




      ↑↓→←  Move Enter:Select +/-/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.

Spread Spectrum

This item allows you to set the CPU Host/PCI clock and Spread Spectrum.

The settings are: Enabled, Disabled.

Host Clock at next Boot is
This item allows you to select CPU frequency step by step increasing
The choice are: 100MHz~132MHz, 133MHz~200MHz.

DRAM Clock at next Boot is
This field displays the capability of the memory modules that you can use
The choice is either 100MHz or 133MHz or 166MHz.

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/ME/NT4.0/2000/XP

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 12 selections:

1. IDE install SiS MINI IDE driver
2. VGA install SiS 650/740 On-chip VGA driver
3. SOUND install ALC PCI Audio driver
4. LAN install LAN controller driver **(for 740DMP/740DMZ)**
5. USB2.0 install USB 2.0 driver
6. DIRECTX8 install Microsoft DirectX 8.0 driver
7. PC-CILLIN install PC-CILLIN2002 anti-virus program
8. PC-HEALTH install Winbond Hardware Doctor Monitoring Software
9. MAGIC BIOS install BIOS Live Update Utility
10. LANLED Install LAN State Utility
11. BROWSE CD to browse the contents of the CD
12. EXIT to exit from MAGIC INSTALL menu

4-1 IDE Install SiS MINI IDE Driver

1. Click IDE when Magic Install main menu appear

2. Click NEXT when SIS IDE Driver Setup window appear

3. Select components and Click Next

4. Click FINISH and Restart Computer

4-2 VGA　　　Install SiS 650/740 VGA Driver

The path of the file:

for WINDOWS 9X is X:\SIS650\VGA\WIN9X\SETUP.EXE (including Windows 98/98SE/ME)

for WINDOWS NT4.0 is X:\SIS650\VGA\WINNT40

for WINDOWS 2000 is X:\SIS650\VGA\WIN2000\SETUP.EXE

For WINDOWS 98/98SE/ME/2000/XP

1. Click VGA when Magic Install MENU appears

2. Click Next when SiS Compatible Multimedia Package appears

3. Multimedia Package support three types of Setup: Typical, Compact, Custom Please choice Typical and Click Next to continue step

4. System will add program icons to the Program Folder listed. Click Next to continue, and after "Start Copying Files" window appears click Next

5. After Setup complete please select restart my computer now and click Finish to complete setup

4-3　Sound　Install ALC Audio Codec Driver

1. Click SOUND when MAGIC INSTALL MENU appears

2. Then auto detect operation system language edition, click OK, start to install DRIVER
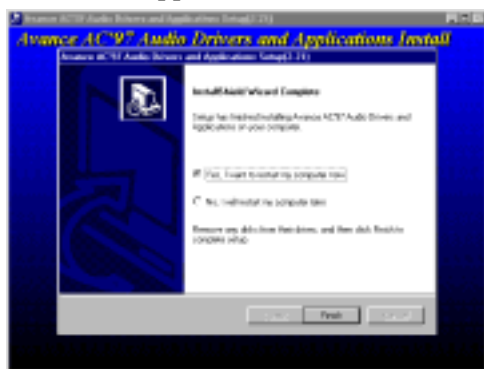
3. Click Finish and Restart Windows

4. Click Start→Program→Avance Sound Manager→AvRack. Then AVRACK Windows appears
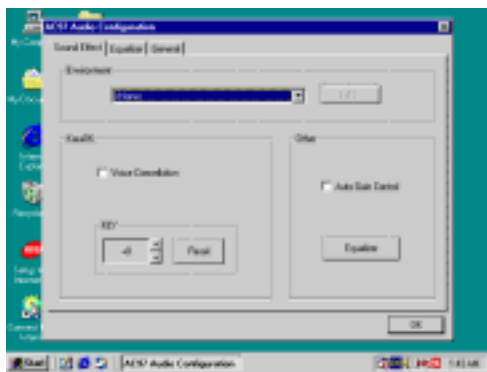
5. Sound Effect select and KaraOK Mode Function
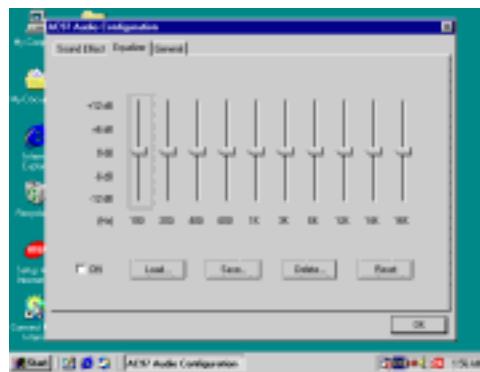
6. Manual Sound Effect Setting

Note: The path of the file
       For WIN98/NT4.0/WIN2K is X:\CODEC\ALCCODEC\SETUP.EXE

4-4   LAN   install LAN controller driver (for 740DMP/740DMZ)

The path of the file:

for WINDOWS 9X/2000/XP is X:\SIS650\LANDRV\SETUP.EXE

for WINDOWS NT4.0 is X:\SIS650\LANDRV\NT40

WINDOWS 95/98/98SE/98ME/2000/XP Setup

1. Click LAN when Magic Install Menu appears

2. Click NEXT when SiS PCI LAN Driver Setup appears

3. Choice restart my computer now to finish setting up LAN Card, click Finish to complete setup

4. After restart computer you can check in control Panel\System Device Manager\ Network adapters to make sure LAN card

4-5 PC-HEALTH   Winbond Hardware Doctor Monitoring Software

1. Click PC-Health when Magic Install Menu appears

2. When Winbond Hardware Doctor Setup Window appears Click NEXT, Select destination directory Click NEXT, Enter program folders name and Click NEXT, When Start copying files windows appears Click NEXT

3. When Setup complete windows appears Click FINISH and Restart Computer

4. Click Program $\rightarrow$ Winbond HWDoctor $\rightarrow$ HWDoctor the Winbond Hardware Doctor will appears

5. Winbond Hardware Doctor monitoring

6. Winbond Hardware Doctor monitoring CPU /

system voltage SYSTEM FAN speed and CPU/ SYSTEM Temperature. If the value is over default setting the system will have warring picture and beeps

4-6   MAGIC BIOS Install BIOS Live Update Utility
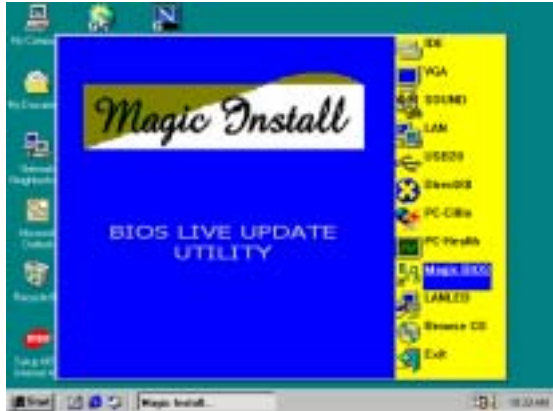
1.   Click Magic BIOS when Magic Install MENU appears

2.   Click Next to install the Magic BIOS in Destination Folder
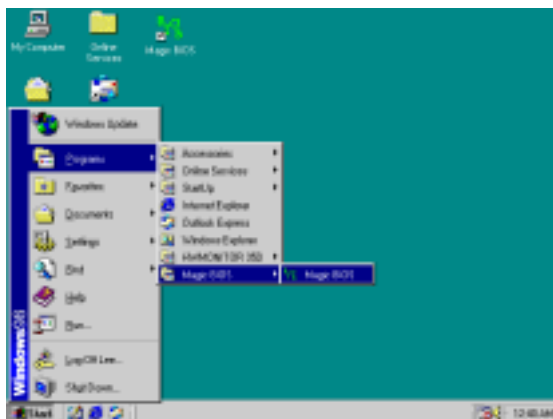
3.   After finish Setup you will have a Magic BIOS icon in your screen

4.   Double click the Magic BIOS icon you will have this picture, choose from internet you can upgrade BIOS On-line

5.   When On-line update BIOS the program

6.   Click Next if you need update BIOS, after

will auto-check your BIOS version

upgrade BIOS, the system will clear CMOS and automatically restart
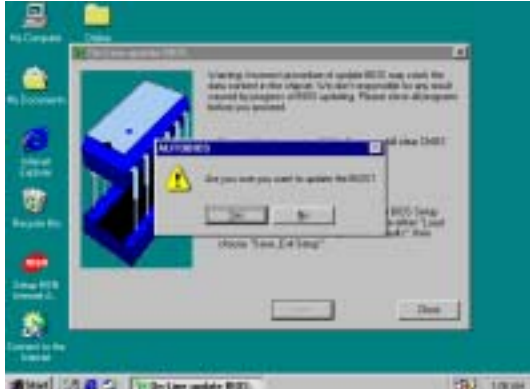
7. Click Yes if you want to update the BIOS otherwise choose No to exit
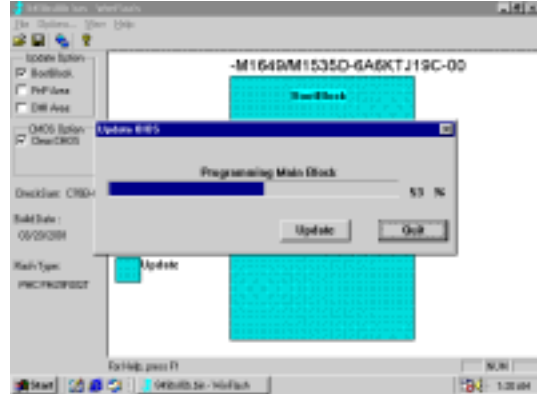
8. When System programming BIOS don't turn off power, after finish update BIOS, the system will clear CMOS and automatically Restart

9. When choose From Local Driver to update BIOS, you must have the correct BIOS file in your Local Driver
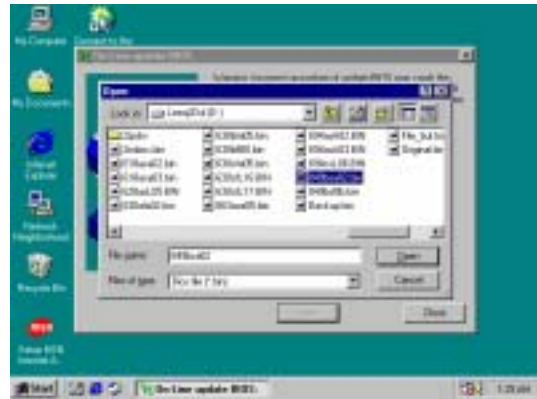
10. Choose the correct BIOS file to update BIOS

4-7   PC-CILLIN   Install PC-CILLIN 2002 Anti-virus program

1. Click PC-CILLIN when MAGIC INSTALL

2. (1) Click "Install PC-CILLIN" when PC-

MENU appear

CILLIN 2002 main menu appears, and Click NEXT when "Install Shield Wizard For PC-CILLIN 2002"

(2) Click Open Manual. you can learn PC-CILLIN 2002 how to use
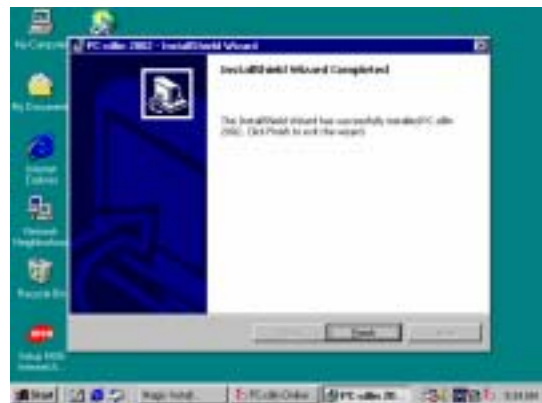

3. This is license agreement, select "I Accept the terms" and Click NEXT

4. Click NEXT and Enter your Customer Information, Click NEXT or choose Change to change the path for the file to be stored
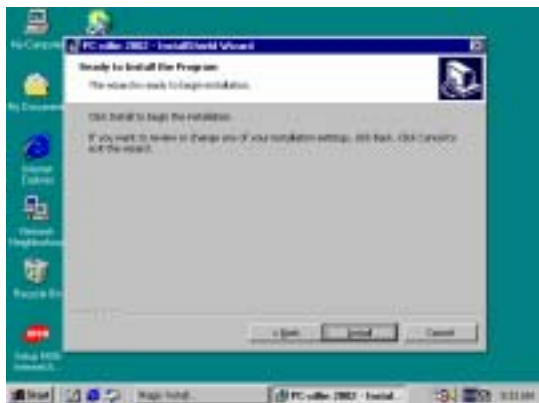
5. Click INSTALL, Start to install the software

6. Setup Complete and click FINISH

7. After PC-CILLIN 2002 complete, Please register your information and get LICENSE KEY from TREND MICRO web site, enter your license key and click FINISH

8. finish register process, we recommend select update item ro download newest engine code and virus code
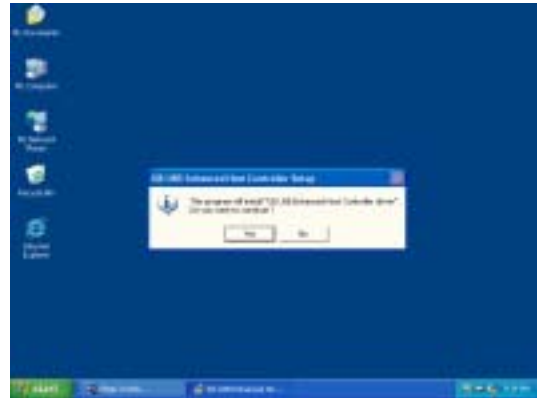
Note : **Please install ACROBAT READER, Before you read PC-CILLIN 2002 User**
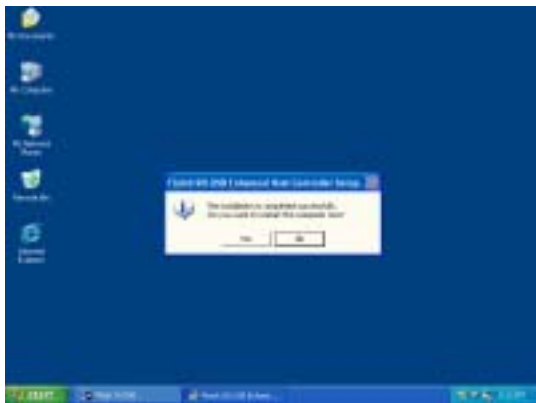
4-8 USB2.0 Install SIS USB2.0 Device Driver

1. Click USB2.0 when MAGIC INSTALL MENU Appear

2. When SIS USB Enhanced Host Controller Setup appears, Click YES

3. When Finish SIS USB Enhanced Host Controller Setup appears, Click YES and restart computer

4. Check device working properly in Device Manager

4-9 HOW TO DISABLE ON-BOARD SOUND

Enter BIOS SETUP choose INTEGRATE PERIPHERALS choose ON-CHIP DEVICE FUNCTION choose AC97 SOUND DEVICE

Disable on-board sound function by press PAGE DOWN KEY to Disable

4-10 HOW TO UPDATE BIOS

Method 1. Use "Magic BIOS" update BIOS in Windows 98 (refer)

Method 2. In DOS Mode

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 740DMP/740DMU/740DMZ from our web site to your boot disc.

STEP 4. Insert your boot disc into A:,

start the computer, type "Awdflash A:\740DMAxxx.BIN /SN/PY/CC/R"

740DMAxxx.BIN is the file name of latest BIOS it can be 740DMA03.BIN or 740DMB02.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