865PBA/865PBAP

USER'S MANUAL

M/B For LGA 775 Pentium 4 Processor

Trademark:

TABLE OF CONTENT

USER'S NOTICE

Manual Revision Information

Reversion	Revision History	Date
1.0	First Release	October 2004

Item Checklist

- ☑ 865PBA/865PBAP Motherboard
- ☑ Cable for IDE/Floppy
- ☑ CD for motherboard utilities
- ☐ Cable for USB2 Port (Option)
- ☐ SPDIF-IN/SPDIF-OUT Adaptor (Option)
- ☑ Cable for Serial ATA IDE Port
- ☑ 865PBA/ 865PBAP User's Manual

Intel Pentium 4 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, 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. 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 Intel processors.

For vendor list of heatsink and fan, please visit :
http://developer.intel.com/design/Pentium4/components/index

Chapter 1

Introduction of 865PBA/865PBAP Motherboard

1-1 Feature of motherboard

The 865PBA/865PBAP motherboard is design for use Intel Pentium 4 Processor in LGA775 (Land Grid Array) Socket Prescott Processor with the Intel 865PE Chipset delivers a high performance and professional desktop platform solution. Which utilize the design and the memory size expandable to 2.0GB.

These motherboards use the newest Intel 865PE Chipset Supports 800/533MHz System Bus in data transfer rate, these motherboards provided 200/166/133MHz SDRAM clock frequency support DDR400/DDR333/DDR266 SDRAM. These motherboards also provided Dual Channel function to increase memory performance. The motherboard embedded ICH5 chipset offers two parallel ULTRA ATA **100** interface and two serial ATA interface to provide speedier HDD throughout that boosts overall system performance.

For those wanting even greater graphic performance, an AGP 4X slot is included on the board **(For 1.5V AGP card only. No for 3.3V or Universal AGP card).** This AGP slot will support either a 4X/8X VGA card.

The 865PBAP motherboard including Fast Ethernet PCI controller chip support 10Mb/s, 100Mb/s Base transfer rate.

These motherboards also has an integrated 6-channel AC97' CODEC chip on board support 6-channel 3D surround positioning Audio 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 eight USB2.0 function ports, these motherboards meet future USB demand also these motherboards have built-in hardware monitor function. This will monitor and protect your computer. These motherboards special design in hardware to protect BIOS from virus crash BIOS data.

These motherboards provide special function in BIOS Setup to setting CPU Host clock step by step increasing let users to approach over clocking.

These motherboards provided high performance & meet future specification demand. It is really wise choice for your computer.

1-2 Specification

Spec	Description
Design	* ATX form factor 4 layers PCB size: 30.5x22.0cm
Chipset	* Intel 865PE Memory Controller Hub (MCH) Chipset for 865PBA/865PBAP * Intel 82801EB I/O Controller Hub (ICH5) Chipset
CPU Socket **(LGA 755 Socket)**	* Support Intel Pentium 4 755-Land LGA Package utilizes Flip-Chip Land Grid Array (FCLGA4) package processor * Support CPU Frequency 533MHz/800MHz * Support 2.8G/3.0G/3.2G LGA 755 Pentium 4 processor * Reserves support for future Intel Pentium 4 processors
Memory Socket	* 184-pin DDR SDRAM module socket x2 * Support Dual channel DDR266/DDR333/DDR400 DDR SDRAM * Expandable to 2.0GB
Expansion Slot & **Headers**	* AGP slot x1 for AGP 0.8V/1.5V standard only, support AGP 2.0/3.0 & 4X/8X mode * 32-bit PCI slot x 5
Integrate IDE	* Two IDE controllers support PCI Bus Mastering, ATA PIO/DMA and the ULTRA DMA 33/66/100 functions that deliver the data transfer rate up to 100 MB/s
Integrate Serial ATA	* Two Serial ATA Host controllers, that deliver the data transfer rate up to 150 MB/s
LAN On Board **(for 865PBAP only)**	* VIA VT6106S PCI LAN controller chip * Supports 10/100 Mb/sec data transfer rate
Audio	* Realtek ALC 6-channel AC97' Codec integrated * Support 6-channel 3D surround & Positioning Audio * 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 * USB 2.0 connector x4, headers x4 (connecting cable option) * Audio connector Line-in, Line-out, MIC & Game Port header

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:	Intel Pentium 4 3.2GHZ (800MHz FSB)
DRAM:	TwinMOS Winbond W942508CH-5 512MB DDR400 X 2
VGA Card:	ATI 9800 PRO 128MB (1024X768X32BIT Color)
Hard Disk Driver:	Maxtor DiamondMax Plus8 (ATA-133 7200RPM)
BIOS:	Award Optimal default
OS:	Win XP Professional (Service Pack 1)

3D Mark 2001SE		18217
3D Mark 2003		5978
AQUAMRK3		43573
PCMark2004		
System / CPU / Memory		4958 / 4885 / 5041
Graph / HDD		4146 / 3126
Content Creation Winstone 2004		29.5
Business Winstone 2004		22.6
Winbench 99 V2.0:		
Business/Hi-end Disk Winmark99		7990 / 32400
Business/Hi-end Graphic Winmark		632 / 1260
SISMark 2004: SISMark Rating (Internet Content Creation / Office Productivity)		
SISMark 2004		182 (203 / 163)
3D Creation / 2D Creation		203 / 241
/ Web publication		172
Communication / Document Creation		129 / 184
/ Data Analysis		183
SISOFT Sandra 2004 : 1.CPU Arithmetic Benchmark 2.Memory bandwidth Benchmark 3.CPU Multi-Media Benchmark		
1.Dhrystone ALU	MIPS	8714
Whetstone FPU iSSE2	FLOPS	3469 / 6430
2.Int/Float Buffered iSSE2	MB/S	4887 / 4888
3.Integer/Floating-Point SSE2	IT/S	22610 / 30323
UT2003 Benchmark (flyby/botmatch)		229.67 / 79.32
Quake3 DEMO1 / DEMO2	FPS	330.0 / 324.4
Return to Castle Wolfenstein	FPS	155.9
Super Pi (1M)	Second	43s
CPUZ System / CPU Clock		1999.7 / 3195.2

1-4 Layout Diagram & Jumper Setting

PRINT

LAN

MIC

PS/2 Mouse

LINE-IN

PS/2 Keyboard

LINE-OUT

COM1   COM2   USB1   USB

PS2 KB/Mouse Port

CPU Socket

K/B Power ON Jumper
(JP1)

CPU FAN

PC99 Back Panel

ATX Power Connector

ATX 12V Power Connector

DDR DIMMx2

USB Port **(USB1)**

USB Power ON Jumper
(JP2)

USB Port/LAN Connector

Floppy Connector

Audio Connector **(CN1)**

Front Panel Audio

Intel 865PE Chip

CD Audio

SYSFAN1

VIA VT6106S LAN Controller

AGP 4X/8X 1.5V Slot

6-CH AC'97 Audio Codec

Intel 82801EB Chip

PCI Slot

SPDIF Connector

ATA 100 IDE Connector

ITE 8712 I/O Chip

Serial-ATA Connector
(SATA1, 2)

GAME Port Connector

Clear CMOS **(JP3)**

2MBit FWH BIOS

Speak Connector

IR Connector

Front Panel Connector

USB Power ON Jumper
(JP4)

SYSFAN2

USB Port
(USB3, USB2)

4

Jumpers

Jumper	Name	Description	Page
JP3	CMOS RAM Clear	3-pin Block	P.6
JP1	Keyboard Power On Enable/Disabled	3-pin Block	P.7
JP2, JP4	USB Power On Enable/Disabled	3-pin Block	P.7

Connectors

Connector	Name	Description	Page
ATXPWR24P	ATX Power Connector	24-pin Block	P.21
ATX12V1	ATX 12V Power Connector	4-pin Block	P.21
USB1, UL_B	USB Port Connector	4-pin Connector	P.22
LAN (for 865PBAP)	**LAN Connectors**	**RJ-45 Connector**	**P.22**
KB (PS2 KB/MOUSE)	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female	P.22
PARALLEL	Parallel Port Connector	25-pin Female	P.22
CN1	Audio Line In/Out MIC Connector	3 phone jack Connector	P.22
COM1	Serial Port COM1 Connector	9-pin Connector	P.22
COM2	Serial Port COM2 Connector	9-pin Connector	P.22
FDD	Floppy Driver Connector	34-pin Block	P.23
IDE1/IDE2	Primary/Secondary	40-pin Block	P.23
SATA1, SATA2	Serial-ATA Port Connector	7-pin Block	P.24

Headers

Header	Name	Description	Page
AUDIO	Line-Out, MIC Headers	9-pin Block	P.24
USB2, USB3	USB Port Headers	9-pin Block	P.24
SPEAK	Speaker connector	4-pin Block	P.25
JW_FP (Power LED/Reset/ IDE LED/ Power Button)	Front Panel Header (including Power LED/ IDE activity LED/ Reset switch / Power On Button lead)	9-pin Block	P.25
CPUFAN	FAN Headers	4-pin Block	P.25
SFAN1, SFAN2	FAN Headers	3-pin Block	P.25
IR	IR infrared module Headers	5-pin Block	P.26
CDIN	CD Audio-In Headers	4-pin Block	P.26
GAME	Game Port Headers	15-pin Block	P.26

Expansion Sockets

Socket/Slot	Name	Description	Page
LGA 775 Socket	CPU Socket	LGA 775 CPU Socket	P.8
DIMM1, DIMM2	DDR Module Socket	184-pin DDR SDRAM Module Expansion Socket	P.18
PCI1 ~ PCI5	PCI Slot	32-bit PCI Local Bus Expansion slots	P.19
AGP	AGP 4X/8X Mode Slot	AGP Expansion Slot	P.20

Chapter 2

Hardware installation

2-1 Hardware installation Steps

Before using your computer, you had better complete the following steps:
1. Check motherboard jumper setting
2. Install CPU and Fan
3. Install System Memory (DIMM)
4. Install Expansion cards
5. Connect IDE and Floppy cables, Front Panel /Back Panel cable
6. Connect ATX Power cable
7. Power-On and Load Standard Default
8. Reboot
9. Install Operating System
10. Install Driver and Utility

2-2 Checking Motherboard's Jumper Setting

(1) CMOS RAM Clear (3-pin) : JP3

A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JP3 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 JP3 and short pins 2-3 for a few seconds
4. Return JP3 to its normal setting by shorting pins 1-2
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

JP3 1-2 closed Normal (Default)   JP3 2-3 closed Clear CMOS

CMOS RAM Clear Setting
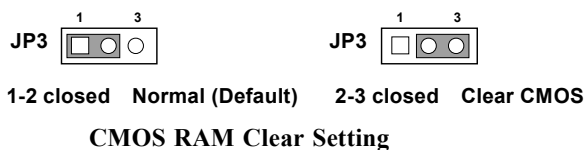
(2) Keyboard/USB Power On function Enabled/Disabled: JP1/JP2, JP4

When setting Enabled you can using keyboard by key in password/USB device to power on system.

| JP1 | 1-2 closed | K/B Power ON Disabled (Default) |
| JP1 | 2-3 closed | K/B Power ON Enabled |

| JP2 | 1-2 closed | USB Power On Disabled (Default) |
| JP2 | 2-3 closed | USB Power On Enabled |

| JP4 | 1-2 closed | USB Power On Disabled (Default) |
| JP4 | 2-3 closed | USB Power On Enabled |
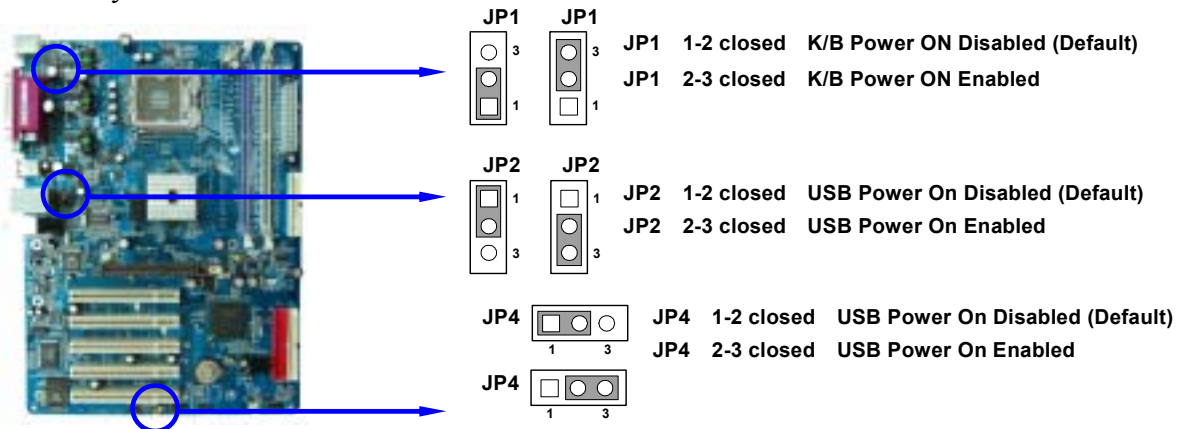
2-3 Install CPU

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), 4X (266MHz), or 8X (533MHz).

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 Intel Pentium 4 LGA775 CPU

This motherboard provides a 775-pin surface mount, LGA775 Land Grid Array socket, referred to as the LGA775 socket supports Intel Pentium 4 processor in the 775 Pin package utilizes Flip-Chip Land Grid Array (FC-LGA4) package technology.

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 LGA775 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.

Colden Arrow
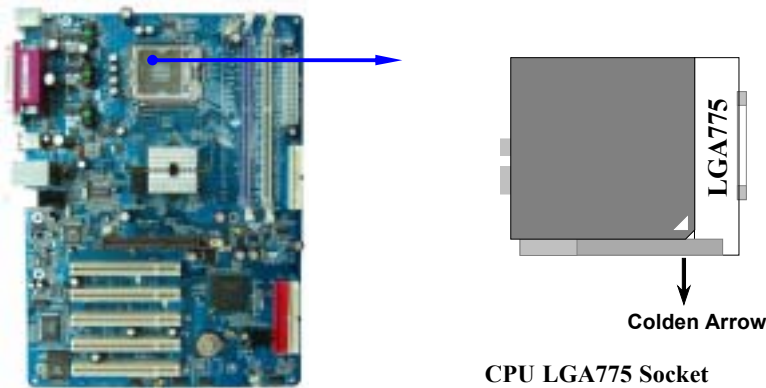
CPU LGA775 Socket

When you put the CPU into the LGA775 socket. No force require to insert of the CPU, then press the level to Locate position slightly without any extra force.

2-3-3 LGA 775 CPU Installation Guide

Socket Preparation

1. Opening the socket:

Note: Apply pressure to the corner with right hand thumb while opening/closing the load lever, otherwise lever can bounce back like a "mouse trap" and WILL cause bent contacts (when loaded)

Socket Load Plate Open

Socket Load Lever Open
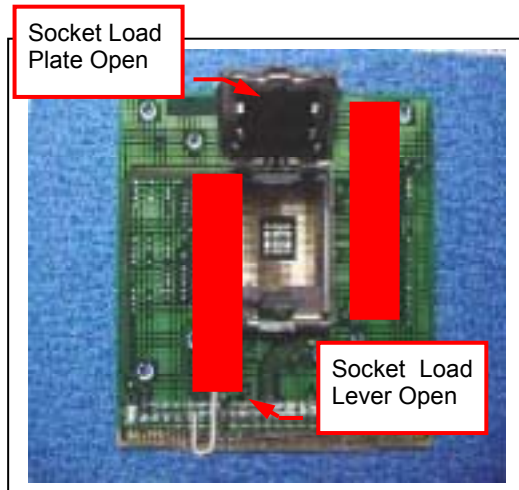
1. Disengage Load Lever by **depressing down** and **out** on the hook to clear retention tab
2. Rotate Load Lever to fully open position at approximately 135degrees
3. Rotate Load Plate to fully open position at approximately 100degrees

2. Remove PnP Cap (Pick & Place Cap)

i.   With left hand index finger and thumb to support the load plate edge, engage PnP cap with right hand thumb and peel the cap from LGA775 Socket while pressing on center of PnP cap to assist in removal.

ii. Set PnP cap aside. Always put PnP cap back on if the processor is removed from the socket.

iii. Visually inspect PnP cap for damage. If damage observed, replace the PnP cap.

Lift here: PnP Cap

Note: After PnP cap removal, make sure socket load plate and contacts are free of foreign material; Refer to Overview Module for FM cleaning.

Note: Optionally, remove PnP cap after CPU insertion. This will compromise the ability to visually inspect socket.

3. **Visually inspect for bent contacts (Recommend at least 1stpass visual inspection)**

NOTE: Refer to the Handling and Inspection Module for 1stand 2ndpass inspection details.

NOTE: Glove images are for illustrative purposes only. Please consult local safety guidelines for specific requirements

NOTE: Recommend not to hold the load plate as a lever, instead hold at tab with left hand, removing the PnP cap with right hand

775-land LGA Package Insertion

Press to remove
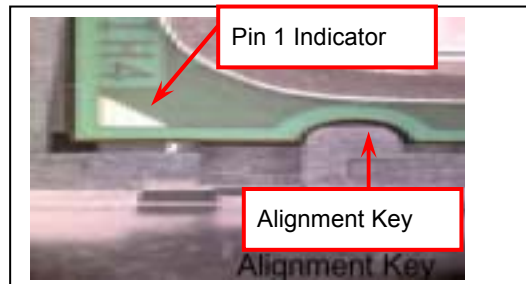
1. Lift processor package from shipping media by grasping the substrate edges ONLY.
Note: Orient processor package such that the Pin 1 triangle mark is on bottom left and both key notches are on left side
2. Land Side Cover Handling: Remove land side cover with the opposite hand by depressing larger retention tab and peeling the cover away
3. Set and reserve the land side cover aside.
 Note: Always keep the land side cover on the processor when not in the socket.

Pin 1 Indicator

Alignment Key

4. Visually inspect the package gold pads: Scan the processor package gold pad array for presence of foreign material. Refer to Overview Module for FM cleaning recommendations
5. Orient the package with IHS up. Locate Pin 1 and the two orientation key notches
6. Carefully place the package into the socket body using a purely vertical motion

CAUTION: Using Vacuum Pen for installation is *not* recommended
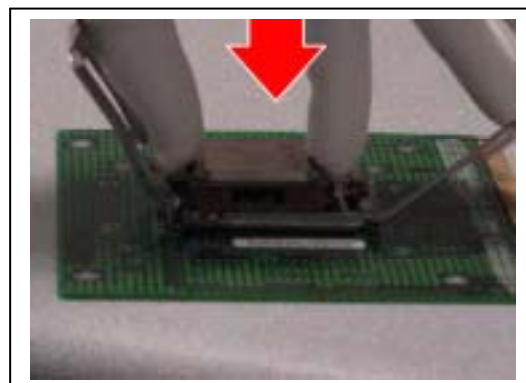
7. Verify that package is within the socket body and properly mated to the orient keys
8. Close the socket by
i. Rotating the Load Plate onto the package HIS
ii. While pressing down lightly on Load Plate, engage the Load Lever.
iii. Securing Load Lever with Load Plate tab under retention tab of Load Lever
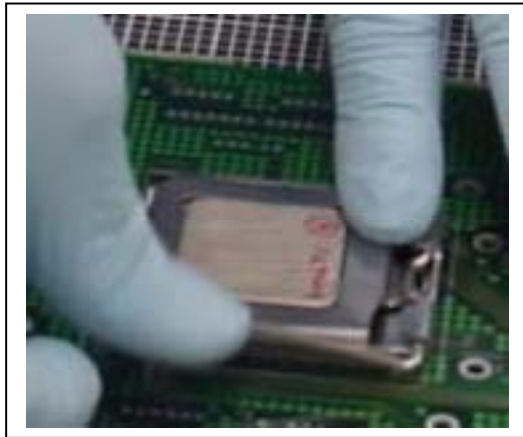
775-Land Package Removal
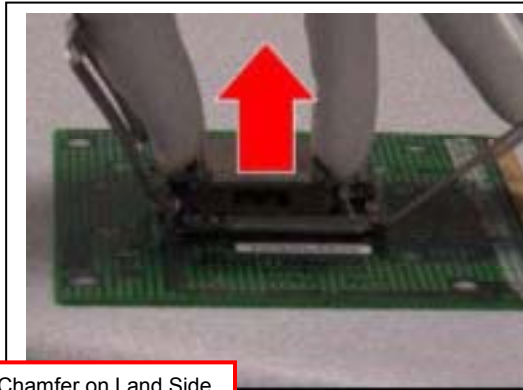
Chamfer on Land Side Cover (align this with pin 1 mark on 775-land LGA package)
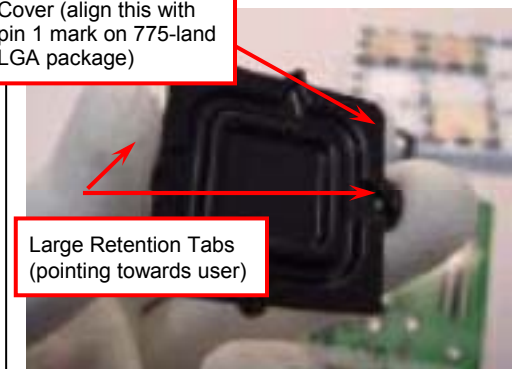
Large Retention Tabs (pointing towards user)
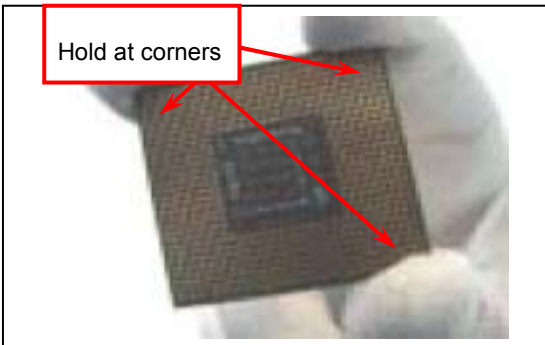
Hold at corners

1. Open the Load Plate/Lever with both hands:
   With left hand index finger and thumb to support the load plate edge, engage PnP cap with right hand thumb and peel the cap from LGA775 Socket while pressing on center of PnP cap to assist in removal.
2. Pick up 775-land LGA package:
   By Vacuum Pen: Place a minimum 9-mm cup at approximately the center of IHS.
   Recommend not to place Vacuum Pen on IHS edge. Risk of dropping and causing bent contact.
   Recommend not to use Vacuum Pen for inserting CPU By Hand: Index finger to hold load plate hinge side and thumb to hold load lever side
3. Lift the package straight up and away.
4. Assemble processors land side cover immediately to prevent contamination.
i. While holding the processor by the 3 corners, the other hand lift land side cover from work surface by grasping at the large retention tabs. Ensure retention tabs and package are pointing each other.
ii. Orientate so that land side cover chamfer is matching with package Pin 1 location.
iii. Hook the first large retention tab on the package substrate. Then press the opposite tab onto the substrate.
iv. Place processor with land side cover installed onto proper shipping media or other ESD approved work surface

5. Visually inspect socket contact array

1. First Pass Inspection

i. Scan socket contact array at varying angles noting the presence of any foreign material

ii. If foreign material can't be blown off by compressed air, or mechanical damage (Mode1 or 4) observed, reject the motherboard for further evaluation or socket replacement.

2. Second Pass Inspection

i. Repeat 2 more times to sight down the rows and columns from each of the 4 sides of the socket to ensure all contacts within the array are inspected

ii. Inspect for Mode2, Mode3, and Mode5 failures

Note: Refer to the Test Module for detail visual inspections

6. Assemble LGA775 socket PnP cap

i. Secure/Hook the back side of PnP cap.

ii. Snap down the front side to fully secure

7. Close the Socket

Intel Reference Thermal Solution Assembly

NOTE: Depending on the configuration, Thermal Solution Integration procedure could perform with M/B alone or with M/B in the Chassis.

0.150-inch backside clearance for fastener installation
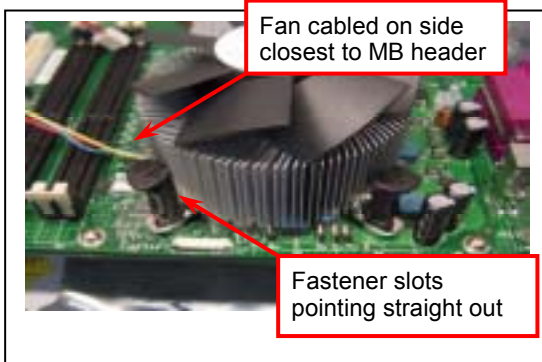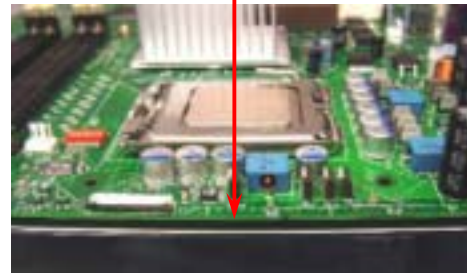
Fan cabled on side closest to MB header

Fastener slots pointing straight out

1. Place motherboard on support structure providing minimum 0.150-inch backside clearance

2. Apply 300 mg of Thermal Interface Material (Shin-Etsu G751) onto center of IHS
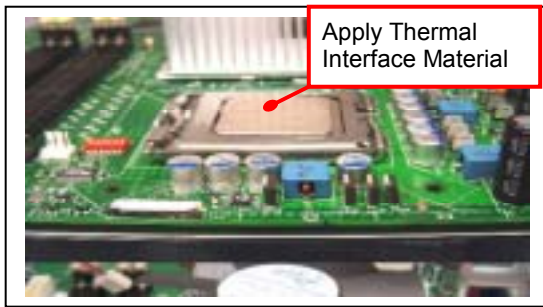
Apply Thermal Interface Material

3. Remove Heat Sink (HS) from packaging media

4. Place HS onto the LGA775 Socket
- Ensure fan cables are oriented on side closest to fan header
- Align Fasteners with MB through-holes

Fastener Cap not resting against spring

Fastener flush against MB
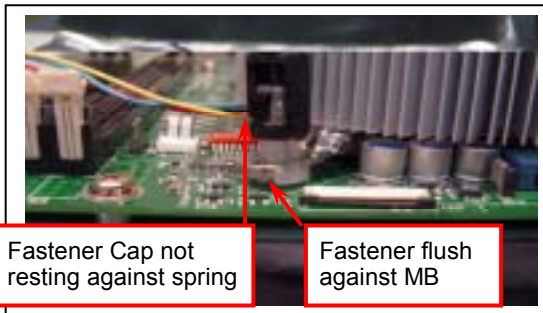
5. Inspection
- Ensure cables are not trapped or interfere fastener operation
- Ensure fastener slots are pointing straight out from heatsink

Press Down (4 Places)

Both fastener halves are flush against spring

Fastener flush against spring
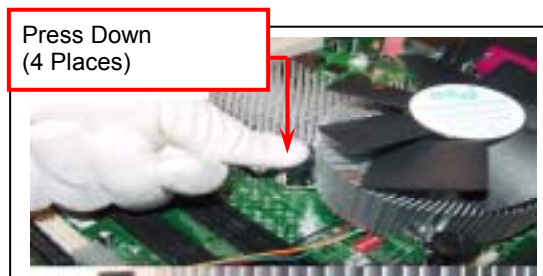
6. Actuate fasteners
- While holding HS to prevent tilting, press down on fastener caps with thumb to install and lock
Repeat with remaining fasteners
7. Inspection
- Verify the fasteners are properly seated
- Ensure both fastener cap and base are flush with spring and motherboard
8. Connect fan header with Board header
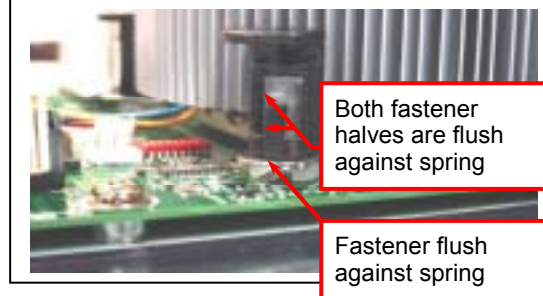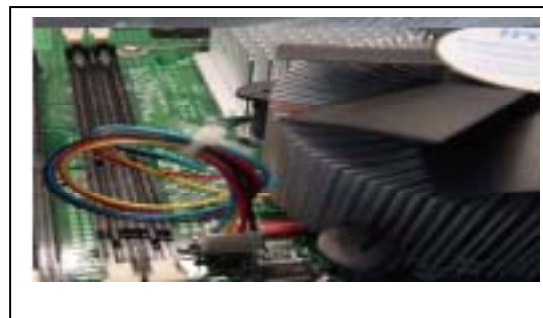
9. Secure excess cable with tie-wrap to ensure cable does not interfere with fan operation or contact other components.

Intel Reference Thermal Solution Disassembly
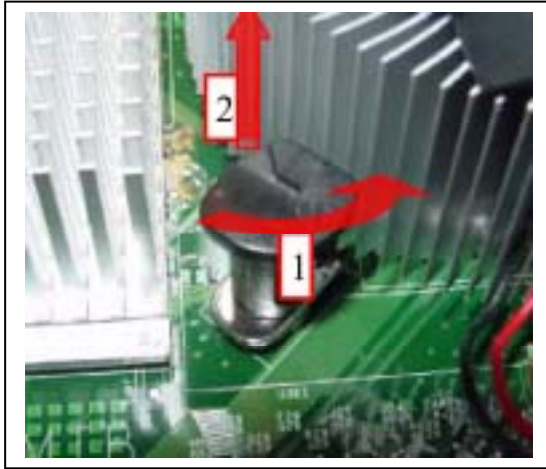
1. Rotate fastener cap. turn to un-lock
2. Pull up fastener cap to un-seat 12

1. Disconnect fan cable from motherboard header
2. Turn fastener caps (4) counter-clock wise 90degrees to the un-locked position
- A flat-bladed screwdriver may be used if required
3. Pull up on fastener caps to unseat
4. Manually remove HS with gentle twist motion.
5. To re-assemble the HS, reset the fastener caps to their original position with the slot perpendicular to the HS. Then, follow the assembly instructions.

Note: Thermal grease should be reapplied

TIM and Grease Removal from CPU
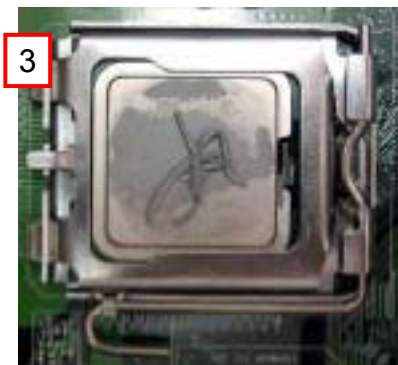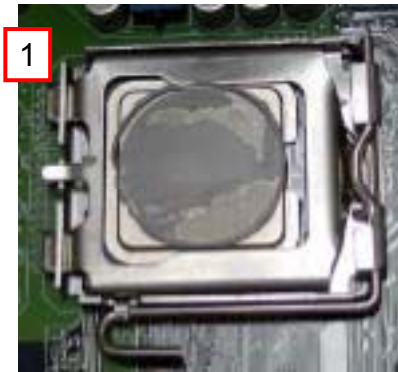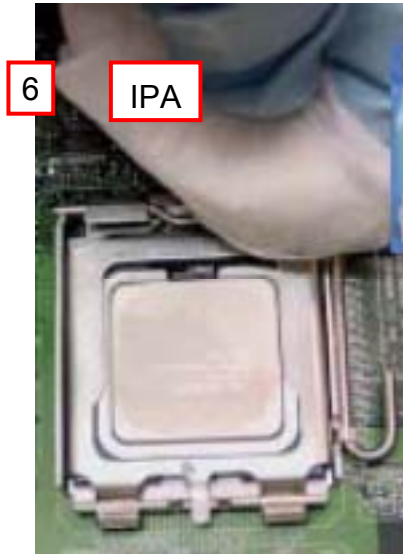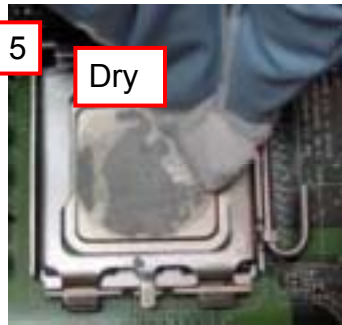
1. Remove the heatsink from the socket
2. Gently push loose thermal interface material (TIM) to center of processor (pictures 2 and 3)
3. Remove pieces with dry cloth (picture 4)
4. Wipe with dry, lint-free cloth to remove most of the material (picture 5)
5. Wet another lint-free cloth with isopropyl alcohol (IPA) and wipe to clean remaining material (picture 6)
6. Be careful to remove material from gaps between processor and load plate
7. For thermal grease removal use Step 4-6

TIM and Grease Removal from Heat-sink

Note: Remove and replace the TIM from the heatsink if you are re-using the heatsink on a new processor

1. Use dry, lint-free cloth and wipe package to remove most of the material
2. Wet another lint-free cloth with isopropyl alcohol (IPA) and wipe heatsink to clean remaining material

Dry
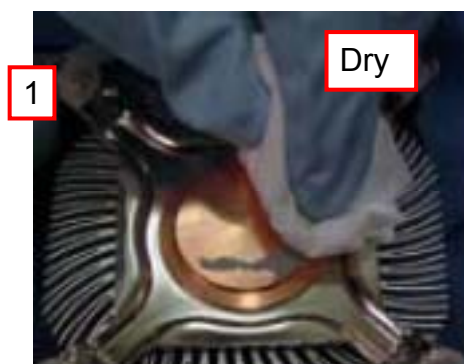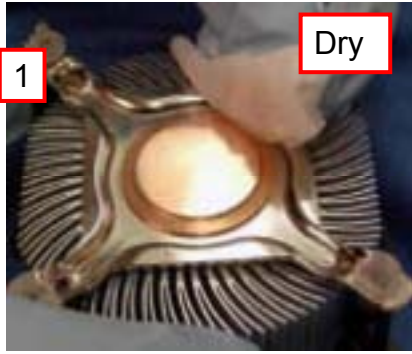
Replacing Damaged Fasteners

- To prevent damage, avoid setting the thermal solution with the prongs down
- Set on heatsink side or with fan down
- The plastic fasteners on the heatsink can be replaced.
- Use Shop Intel to order spare fasteners
- http://www.shop-intel.com
- To remove a damaged fastener

Note: Protective gloves are not required for this procedure
- Rotate the black pin counterclockwise until it "snaps". There will be some resistance
- Remove the black pin from the white prong
- Tilt the white prong to remove it from the heatsink leg

Avoid damage, avoid placing prongs on hard surface

Snap
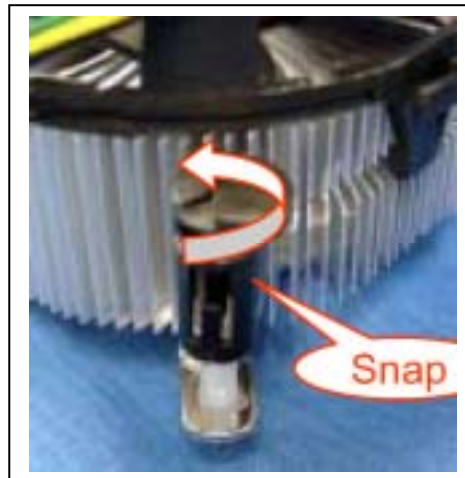
Damaged. Attempts to straighten not recommended

Tilt to remove
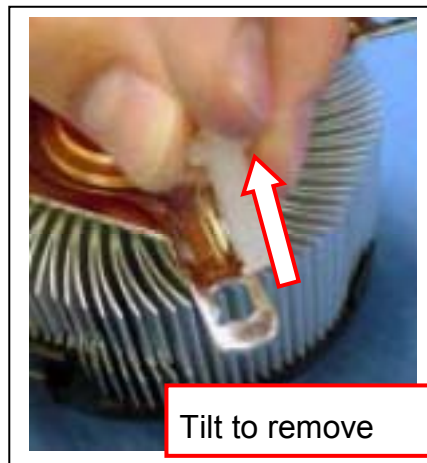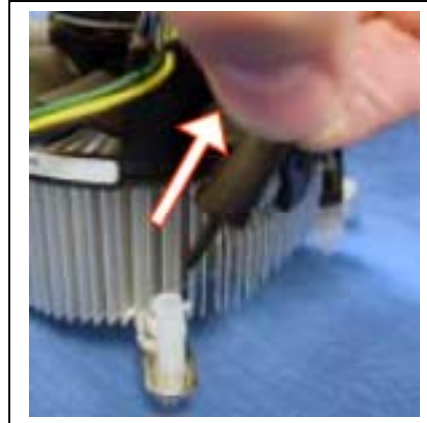
Replacing Fasteners

- To **replace** the fastener
- Start with the white prong
- Note the "keying" notch feature
- Tilt the prong to insert into the heatsink leg.
- Holding the white prong without bending it, push the black pin on from the bottom until you hear a single "click"

Replacement

Tilt to insert

Click
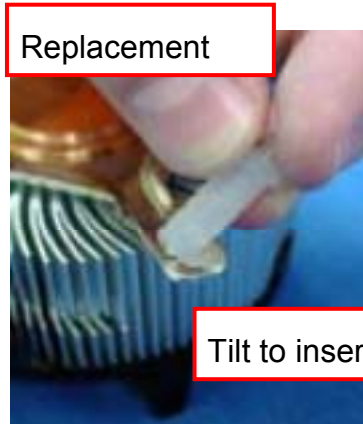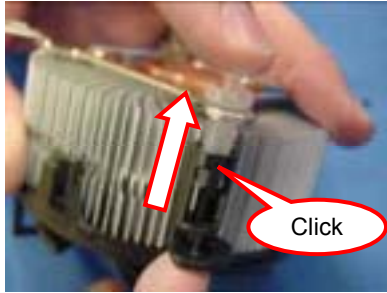
Note: The black pin and white prong will only "snap" on in one orientation

− Check to ensure the black pin is rotated properly for installation with the slot perpendicular to the heatsink

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	PCS	Total Memory
Bank 0, 1 (DIMM1)	DDRDDR266/DDR333/DDR400 DDR SDRAM Module	X1	64MB~1.0GB
Bank 2, 3 (DIMM2)	DDRDDR266/DDR333/DDR400 DDR SDRAM Module	X1	64MB~1.0GB

For Dual channel Limited!
1. Dual channel function only supports when 2 DIMM Modules plug in both DIMM1 & DIMM2.
2. DIMM1 & DIMM2 must be the same type, same size, same frequency for dual channel function.

Generally, installing DDR SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 184-Pin DDR266/DDR333/DDR400 DDR SDRAM module looks like.
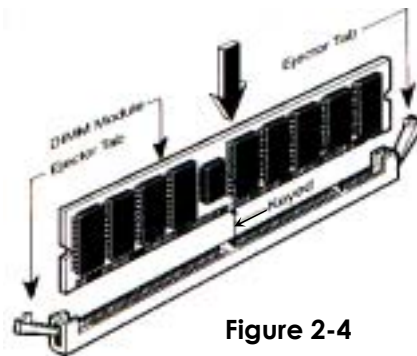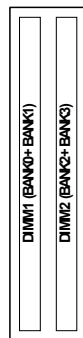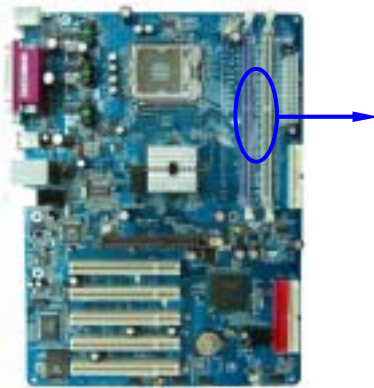
Figure 2-4

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.
WARNING!	For the DDR SDRAM CLOCK is set at 200MHz, use only DDR400-compliant DDR Modules. When this motherboard operate at 200Mhz, most system will not even boot if non-compliant modules are used because of the strict timing issues, if your SDR Modules are not DDR400-compliant, set the DDR SDRAM clock to 133MHz 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	INT E	INT F	INT G	INT H
Slot 1	√							
Slot 2		√						
Slot 3			√					
Slot 4				√				
Slot 5					√			
Onboard LAN					√			
Onboard USB 1								√
Onboard USB 2				√				
Onboard USB 3			√					
Sound		√						

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.

2-5-4 AGP Slot

This motherboard provides an AGP Slot, only support the 1.5V 4X/0.8V 8X AGP VGA card. Do not use AGP 2X card (3.3V) in this motherboard. It will burn and damage the motherboard due to Intel® 865 chipset can not support AGP 2X (3.3V).

IMPORTANT!	Before you plug-in AGP card, please make sure the following notice is fully understood and practiced. If your AGP card has "AGP 4X notch (show below) please make sure your AGP card is AGP 4X/8X (1.5V/0.8V) not AGP 2X (3.3V)

2x notch   4x notch
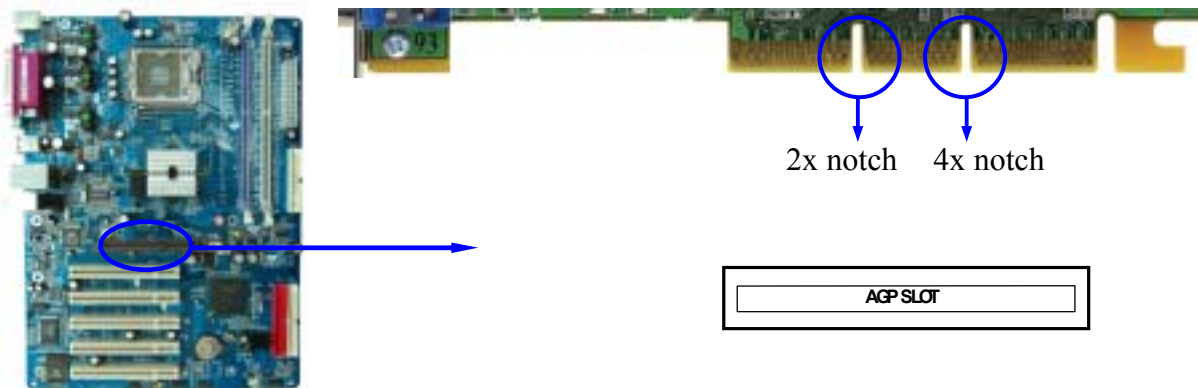
AGP SLOT

Example 1:	SiS 305 & ATi Rage 128 Pro AGP card those golden finger is compatible with 2X/4X mode AGP slot, but only can support 2X (3.3V) only. If you install these cards in Intel® 865 based motherboard it will burn and damage the motherboard.
Example 2:	We also find Diamond Vipper V770 golden finger is design for 2X/4X mode AGP Slot. It can be adjusted the jumper for AGP 2X (3.3V) or AGP 4X (1.5V). But the factory default setting is 2X (3.3V). If you install this AGP card in motherboard without change the jumper setting to 4X (1.5V), it will burn the motherboard.

2-6 Connectors, Headers
2-6-1 Connectors

(1) Power Connector (24-pin block) : ATXPWR24P

ATX Power Supply connector. This is a new defined 24-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.

** We recommend that you use an ATX 12V Specification 2.0-compliant power supply unit (PSU) with a minimum of 350W power rating. This type has 24-pin and 4-pin power plugs.

** If you intend to use a PSU with 20-pin and 4-pin power plugs, make sure that the 20-pin power plug can provide at least 15A on +12V and the power supply unit has a minimum power rating of 350W. The system may become unstable or may not boot up if the power is inadequate.

PIN	ROW1	ROW2
1	3.3V	3.3V
2	3.3V	-12V
3	GND	GND
4	5V	Soft Power On
5	GND	GND
6	5V	GND
7	GND	GND
8	Power OK	-5V
9	+5V (for Soft Logic)	+5V
10	+12V	+5V
11	+12V	+5V
12	+3V	GND

20-Pin   24-Pin
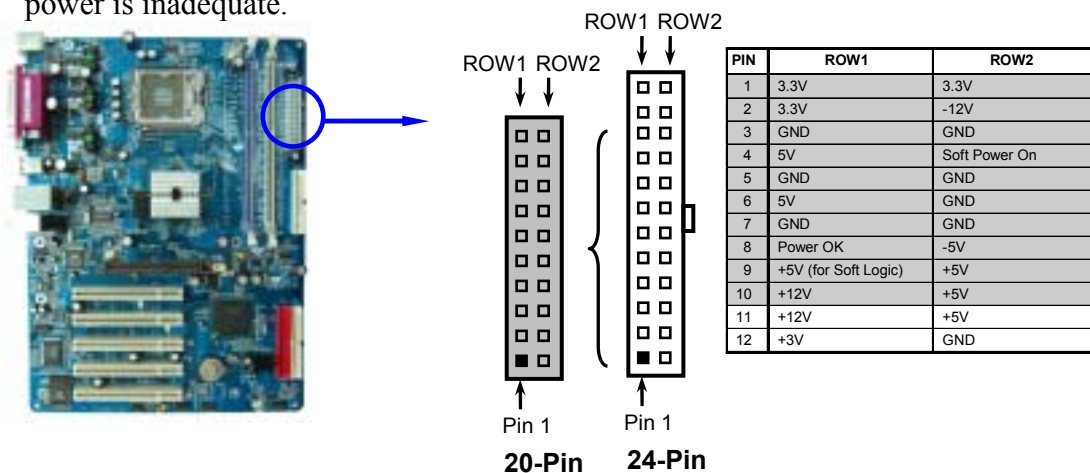
(2) ATX 12V Power Connector (4-pin block) : ATX12V1

This is a new defined 4-pins connector that usually comes with ATX Power Supply. The ATX Power Supply which fully support Pentium 4 processor must including this connector for support extra 12V voltage to maintain system power consumption. Without this connector might cause system unstable because the power supply can not provide sufficient current for system.

Pin 1
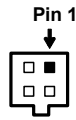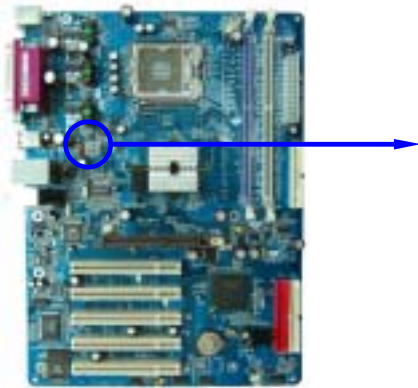
(3)   USB Port connector: USB1, UL_B (USB)
The connectors are 4-pin connector that connect USB devices to the system board.

(4)   LAN Port connector: LAN (for 865PBAP)
This connector is standard RJ45 connector for Network connector.

(5)   PS/2 Mouse & PS/2 Keyboard Connector: KB (PS2 KB/MOUSE)
The connectors for PS/2 keyboard and PS/2 Mouse.

(6)   Parallel Port Connector (25-pin female): PARALLEL
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.

(7)   Audio Line-In, Lin-Out, MIC Connector : CN1
This Connector are 3 phone Jack for LINE-OUT, LINE-IN, MIC
Line-out :   Audio output to speaker
Line-in :   Audio input to sound chip
MIC :   Microphone Connector

(8)   Serial Port COM1/COM2: COM1/COM2
COM1/COM2 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   PRINT   USB1   LAN

MIC
LINE-IN
LINE-OUT

PS/2 Keyboard   COM1   COM2   USB
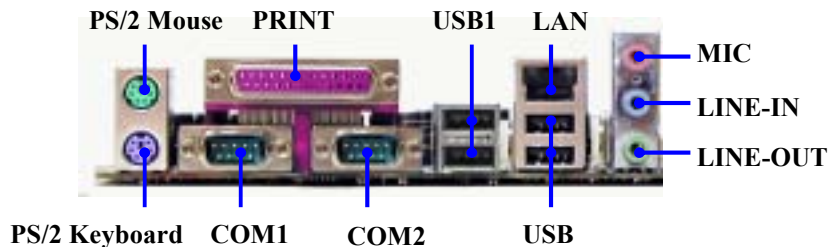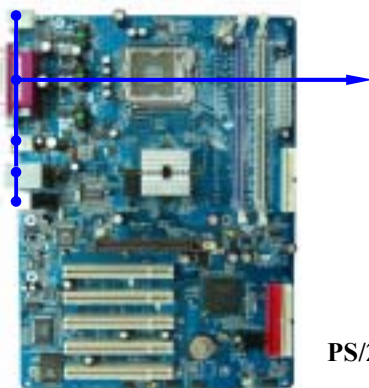
(9) Floppy drive Connector (34-pin block): FDD

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.

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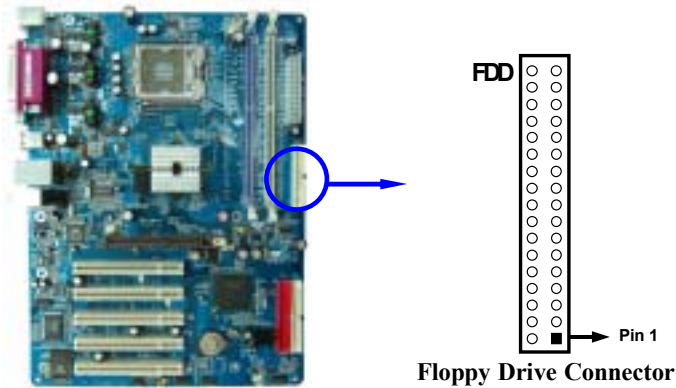
(10) Primary IDE Connector (40-pin block): IDE1

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.

(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.
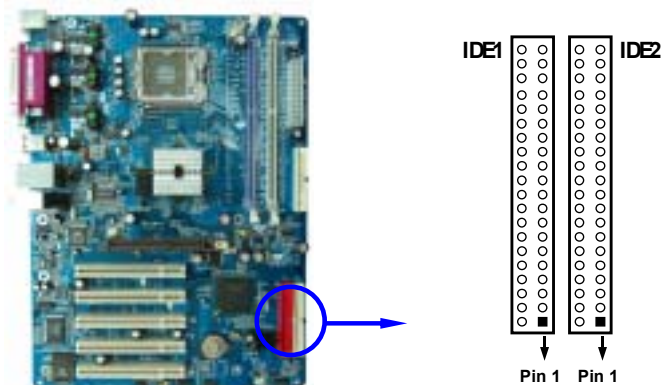
- Two hard disks can be connected to each connector. The first HDD is referred to as the "Master" and the second HDD is referred to as the "Slave".

- 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.

(12) Serial-ATA Port connector: SATA1/SATA2
This connector support the provided Serial ATA IDE hard disk cable to connecting the motherboard and serial ATA hard disk.

Serial-ATA Port Connector
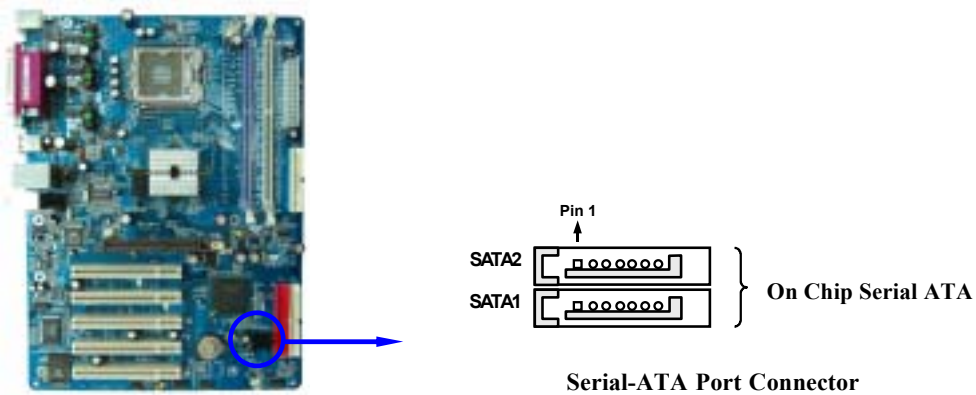
2-6-2 Headers

(1) Line-Out, MIC Header (9-pin): AUDIO
This header connect to Front Panel Line-out, MIC connector with cable.

Line-Out, MIC Headers
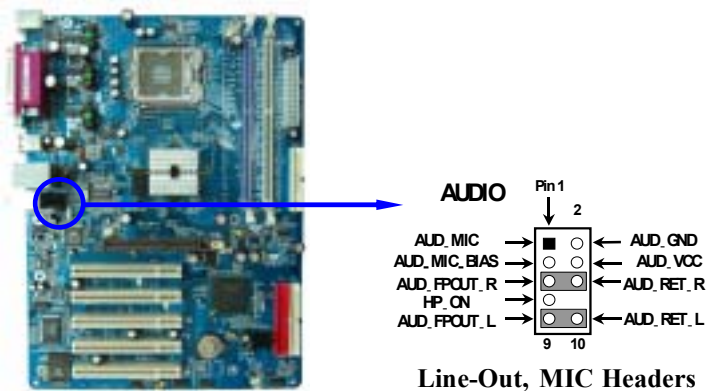
(2) USB Port Connector/Headers (9-pin) : USB2, USB3
The USB2, USB3 is for internal connecting USB device directly. The USB2 header is used for connecting the additional USB port plug. By attaching an option USB cable, your can be provided with two additional USB plugs affixed to the back panel.

USB Port Headers
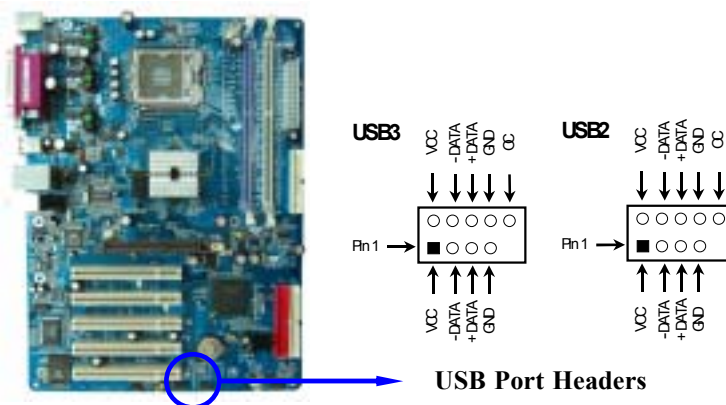
(3)   Speaker connector: SPEAK
This 4-pin connector connects to the case-mounted speaker. See the figure below.

(4)   IDE Activity LED: IDE LED
This connector connects to the hard disk activity indicator light on the case.

(5)   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.

(6)   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.

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

System Case Connections
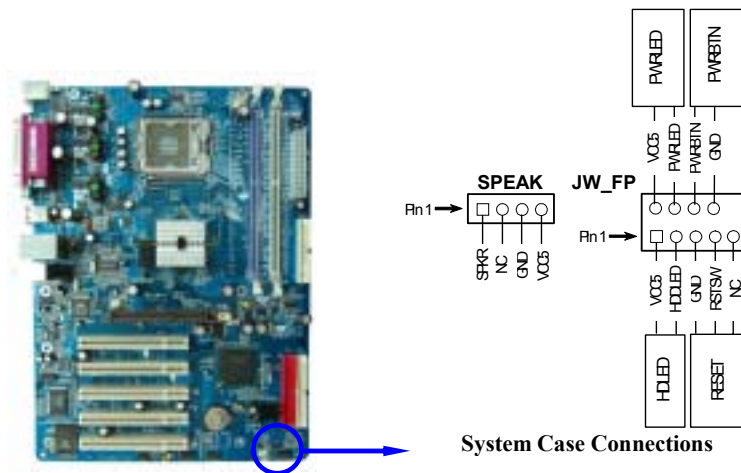
(8)   FAN Headers (4-pin) : CPUFAN
FAN Headers (3-pin) : SFAN1, SFAN2

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.

FAN Headers
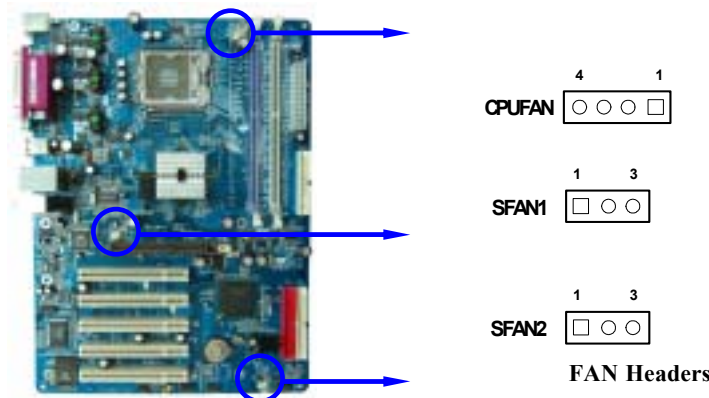
(9) IR infrared module Headers (5-pin) : IR

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

GND IRRX

2 ○ ○ 6
Pin1 → ■ ○ ○ 5

NC VCC5 IRTX
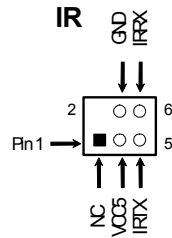
IR infrared module Headers

(10) CD Audio-In Headers (4-pin) : CDIN

CDIN are the connectors for CD-Audio Input signal. Please connect it to CD-ROM CD-Audio output connector.

4   1
CDIN ○ ○ ○ □
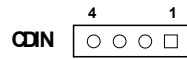
CD Audio-In Headers

(11) Game Port Header: GAME

GAME

○○○○○○○○
■○○○○○○

Pin 1
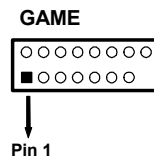
GAME Port Headers

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) 1984-2004 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 settings for optimal performances system operations.

Load Standard Defaults

Use this menu to load the BIOS default values that are factory settings for the 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) 1984-2004 Award Software
                               Standard CMOS Features
 ╔══════════════════════════════════════════════════════════════════════════════╗
 ║    Date (mm:dd:yy)           Thu, Oct, 07 2004    ║         Item Help          ║
 ║    Time (hh:mm:ss)           09 : 44 : 35         ║                            ║
 ║  > 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, 3.5 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) 1984-2004 Award Software
                            Advanced BIOS Features
   ┌──────────────────────────────────────────────────────────────────────────┐
   │  Anti-Virus Protection        Disabled          │       Item Help         │
   │  Cooling Sprite               Disabled          │                         │
   │  CPU L1 & L2 Cache            Enabled           ├─────────────────────────┤
   │  Hyper Threading Technology   Disabled          │  Menu Level >           │
   │  Quick Power On Self Test     Enabled           │                         │
   │  HDD Boot Sprite              Disabled          │                         │
   │  Hard Disk Boot Priority      Press Enter       │                         │
   │  First Boot Device            Floppy            │                         │
   │  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             │                         │
   │  APIC Mode                    Disabled          │                         │
   │  MPS Version Control For OS   1.4               │                         │
   │  OS Select For DRAM > 64MB    Non-OS2           │                         │
   │  Report NO FDD For Windows    Yes               │                         │
   │  Intel OSB Logo Show          Disabled          │                         │
   ├──────────────────────────────────────────────────────────────────────────┤
   │  ↑↓→← 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) 1984-2004 Award Software
                          Advanced Chipset Features

  ┌──────────────────────────────────────────────┬─────────────────────────┐
  │ > DRAM Timing Settings        Press Enter     │                         │
  │   System BIOS Cacheable       Enabled         │       Item Help         │
  │   Video BIOS Cacheable        Enabled         │                         │
  │   Memory Hole At 15M-16M       Disabled       ├─────────────────────────┤
  │   Delay Transaction           Enabled         │   Menu Level >          │
  │   AGP Transfer Mode           Auto            │                         │
  │   AGP Aperture Size           128MB           │                         │
  │   On-Chip VGA                 Enabled         │                         │
  │   On-Chip Frame Buffer Size   16MB            │                         │
  ├──────────────────────────────────────────────┴─────────────────────────┤
  │  ↑↓→← 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.

Delay 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.

AGP Transfer Mode

In this item you can select AGP transfer mode Auto/4X/1X the Default setting is Auto.

3-6-1   DRAM Timing Settings

```
          CMOS Setup Utility – Copyright(C) 1984-2004 Award Software

                            DRAM Timing Settings
  ┌──────────────────────────────────────────┬─────────────────────────┐
  │   Auto Configuration        Standard      │                         │
  │   SDRAM CAS Latency Time     2.5          │        Item Help        │
  │   SDRAM Cycle Time           7            │                         │
  │   SDRAM RAS# to CAS# Delay   3            ├─────────────────────────┤
  │   SDRAM RAS# Precharge Time  3            │   Menu Level >>         │
  │                                           │                         │
  │                                           │                         │
  │                                           │                         │
  ├──────────────────────────────────────────┴─────────────────────────┤
  │  ↑↓→←  Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
  │      F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults     │
  └─────────────────────────────────────────────────────────────────────┘
```

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: 2T and 2.5T.

Note: Change these settings only if you are familiar with the chipset.

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: 2T, 3T and 4T.

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: 2T, 3T and 4T.

3-7 Integrated Peripherals

```
            CMOS Setup Utility – Copyright(C) 1984-2004 Award Software
                              Integrated Peripherals
 ┌──────────────────────────────────────────────────┬──────────────────────┐
 │ > Onboard IDE Function         Press Enter        │                      │
 │ > Onboard Device Function      Press Enter        │      Item Help       │
 │ > Onboard Super IO Function    Press Enter        ├──────────────────────┤
 │   Init Display First           PCI Slot           │                      │
 │   Power On Function            Button Only        │  Menu Level >        │
 │   KB Power On Password         Enter              │                      │
 │   Hot Key Power On             Ctrl-F1            │                      │
 │   Power Loss Function          Always Off         │                      │
 │                                                   │                      │
 │                                                   │                      │
 │                                                   │                      │
 ├──────────────────────────────────────────────────┴──────────────────────┤
 │  ↑↓→← Move Enter:Select +/-/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 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 Onboard IDE Function

```
            CMOS Setup Utility – Copyright(C) 1984-2004 Award Software
                              Onboard IDE Function
 ┌──────────────────────────────────────────────────┬──────────────────────┐
 │  OnChip Primary PCI IDE        Enabled            │                      │
 │  OnChip Secondary PCI IDE      Enabled            │      Item Help       │
 │  Primary Master   PIO          Auto               ├──────────────────────┤
 │  Primary Slave    PIO          Auto               │                      │
 │  Secondary Master PIO          Auto               │  Menu Level >>       │
 │  Secondary Slave  PIO          Auto               │                      │
 │  Primary Master   UDMA         Auto               │                      │
 │  Primary Slave    UDMA         Auto               │                      │
 │  Secondary Master UDMA         Auto               │                      │
 │  Secondary Slave  UDMA         Auto               │                      │
 │  IDE 32-bit Transfer 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  │
 └──────────────────────────────────────────────────────────────────────────┘
```

OnChip IDE Primary/Secondary

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.

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 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 Device Function

```
            CMOS Setup Utility – Copyright(C) 1984-2004 Award Software

                           Onboard Device Function
  ┌─────────────────────────────────────────────┬──────────────────────────┐
  │   AC97 Audio                    Auto         │                          │
  │   AC97 Modem                    Auto         │        Item Help         │
  │   Game Port Address             201          │                          │
  │   Midi Port Address                          │   Menu Level >>          │
  │   Midi Port IRQ                 10           │                          │
  │                                              │                          │
  │   USB Controller                Enabled      │                          │
  │   USB Keyboard Legacy Support   Disabled     │                          │
  │                                              │                          │
  │   On-Chip Serial ATA            Disabled     │                          │
  │   Serial ATA Port1 Mode         Primary Master│                         │
  │                                              │                          │
  ├─────────────────────────────────────────────┴──────────────────────────┤
  │   ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
  │        F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults │
  └─────────────────────────────────────────────────────────────────────────┘
```

AC97 Audio/AC97 Modem

This item is setting on board AC97 Audio/AC97 Modem enabled/disabled. The settings are: Enabled, Disabled, Auto.

Game Port Address/Midi Port Address

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

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

On-Chip Serial ATA
The settings are: Disabled, Auto, Combined Mode, Enhanced Mode, SATA Only.
Default setting is Auto. *Due to the Intel ICH5 Specification limited only provided two
controllers. When plug the Serial ATA hard drive in SATA1 or SATA2 only can support either
IDE1 or IDE2 can works in Windows 9X/ME/2000. But in the Windows XP the OS can
support 6 IDE devices both IDE1, IDE2 and SATA1/SATA2 can works.*

3-7-3 Onboard Super IO Function

```
         CMOS Setup Utility – Copyright(C) 1984-2004 Award Software

                        Onboard Super IO Function

 ┌─────────────────────────────────────────────────┬──────────────────────┐
 │ Onboard FDD Controller       Enabled             │      Item Help       │
 │ Onboard Serial Port 1        3F8/IRQ4            │                      │
 │ Onboard Serial Port 2        Disabled           ├──────────────────────┤
 │ UART Mode Select             Normal             │                      │
 │ IR2 Duplex Mode              Half               │   Menu Level >>      │
 │ Onboard Parallel Port        378/IRQ7           │                      │
 │ Parallel Mode                SPP                │                      │
 │ ECP Mode Use DMA             3                  │                      │
 │                                                  │                      │
 │                                                  │                      │
 │                                                  │                      │
 ├──────────────────────────────────────────────────┴──────────────────────┤
 │ ↑↓→←  Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help│
 │     F5:Previous Values   F6:Optimized Defaults    F7:Standard Defaults    │
 └──────────────────────────────────────────────────────────────────────────┘
```

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) 1984-2004 Award Software

                         Power Management Setup
╔══════════════════════════════════════════════════════════════════════════╗
║   ACPI Function              Enabled                                       ║
║   Power Management           User Define         Item Help                 ║
║   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                                      ║
║   Resume by Alarm            Disabled                                      ║
║ X Date (of Month)            0                                             ║
║ X Time (hh:mm:ss)            0 : 0 :0                                      ║
║   CPU Thermal Management Timer  32 Min                                     ║
║ > PM Timer Reload 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 in Suspend

This determines the manner in which the monitor is blanked. The choice are Yes → Video will off , and No→ Video 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.

Wake-Up by PCI card /Power On by Ring

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

Wake-Up on RTC 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

PM Timer Reload Events

Please refer to section 3-8-1

3-8-1 PM Timer Reload Events

```
                CMOS Setup Utility – Copyright(C) 1984-2004 Award Software
                               PM Timer Reload Events
 ┌─────────────────────────────────────────────────┬──────────────────────────┐
 │  Primary IDE 0                  Disabled         │         Item Help        │
 │  Primary IDE 1                  Disabled         │                          │
 │  Secondary IDE 0                Disabled         ├──────────────────────────┤
 │  Secondary IDE 1                Disabled         │   Menu Level  >>         │
 │  FDD, COM, LPT Port             Disabled         │                          │
 │  PCI PIRQ [A-D] #               Disabled         │                          │
 │                                                  │                          │
 │                                                  │                          │
 │                                                  │                          │
 │                                                  │                          │
 │                                                  │                          │
 ├──────────────────────────────────────────────────────────────────────────┤
 │  ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help │
 │     F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults     │
 └──────────────────────────────────────────────────────────────────────────┘
```

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) 1984-2004 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       │                        │
  │   Assign IRQ For VGA              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) 1984-2004 Award Software
                                    IRQ Resources
┌─────────────────────────────────────────────────────────┬──────────────────────┐
│  IRQ-3    assigned to          PCI Device                 │                      │
│  IRQ-4    assigned to          PCI Device                 │      Item Help       │
│  IRQ-5    assigned to          PCI Device                 │                      │
│  IRQ-7    assigned to          PCI Device                 │                      │
│  IRQ-9    assigned to          PCI Device                 │   Menu Level >>      │
│  IRQ-10   assigned to          PCI Device                 │                      │
│  IRQ-11   assigned to          PCI Device                 │                      │
│  IRQ-12   assigned to          PCI Device                 │                      │
│  IRQ-14   assigned to          PCI Device                 │                      │
│  IRQ-15   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) 1984-2004 Award Software
                                  PC Health Status
┌─────────────────────────────────────────────────────────┬──────────────────────┐
│  Shutdown Temperature          Disabled                  │                      │
│  CPU Warning Temperature       Disabled                  │      Item Help       │
│  Show PC Health in Post        Enabled                   │                      │
│  Current System Temperature    25ºC                      │                      │
│  Current CPU Temperature       38ºC                      │   Menu Level >       │
│  Current CPUFAN Speed          5000 rpm                  │                      │
│  Current SYSFAN Speed          5000 rpm                  │                      │
│  Current SYSFAN2 Speed         5000 rpm                  │                      │
│  Vcore                         1.71V                     │                      │
│  Vcc1.5                        1.51V                     │                      │
│  Vcc3.3                        3.31V                     │                      │
│  + 5V                          4.98V                     │                      │
│  +12V                          12.22V                    │                      │
│  -12V                          -12.36V                   │                      │
│  - 5V                          -4.99V                    │                      │
│  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          │
└─────────────────────────────────────────────────────────────────────────────────┘
```

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.

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.

3-11 Miscellaneous Control

This section is for setting CPU Frequency/Voltage Control.

```
          CMOS Setup Utility – Copyright(C) 1984-2004 Award Software
                           Miscellaneous Control
┌─────────────────────────────────────────────────────────────────────────────┐
│  CPU Clock Ratio                8 X                                           │
│  Auto Detect PCI Clk            Enabled          Item Help                    │
│  Spread Spectrum                Disabled   ─────────────────────             │
│  ** Current Host Clock is 100/33MHz **                                       │
│  HOST/PCI Clock at Next Boot is     100/33MHz    Menu Level >                 │
│  ** Current DRAM Clock is 133MHz **                                          │
│  DRAM Clock at Next Boot is         DDR266                                    │
│  Flash Part Write Protect           Enabled                                  │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
├─────────────────────────────────────────────────────────────────────────────┤
│  ↑↓→←  Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit  F1:General Help   │
│      F5:Previous Values    F6:Optimized Defaults   F7:Standard Defaults       │
└─────────────────────────────────────────────────────────────────────────────┘
```

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

Spread Spectrum
This item allows you to set the CPU Host/PCI clock and Spread Spectrum.
The settings are: Enabled, Disabled.

Host/PCI Clock at Next Boot
This item allows you to select CPU frequency step by step increasing.
The choice are: 400MHz CPU----100MHz~350MHz, 533MHz CPU---133MHz~350MHz
800MHz CPU---200MHz~350MHz

DRAM Clock at Next Boot is
This item allows you select the DRAM Clock for DDR266/DDR333/DDR400. The setting are:
DDR266 for P4/400MHz CPU, DDR266/DDR333 for P4/533MHz CPU, DDR266/DDR333
/DDR400 for P4/800MHz CPU

Flash Part Write Protect
This item allows you protect your BIOS chip from Virus destroy data. When Flash BIOS you
have Disabled this item.

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 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 9 selections:
1. INF   install Intel 865 chipset system driver
2. SOUND   install ALC AC97' Codec Audio driver
3. LAN   install VIA LAN Controller driver **(for 865PBAP)**
4. USB2.0   install USB 2.0 driver
5. PC-CILLIN   install PC-CILLIN2004 anti-virus program
6. PC-HEALTH   install ITE Smart GUARDIAN driver
7. MBIOS&DX9   install BIOS Live Update Utility and Microsoft DirectX 9 driver
8. BROWSE CD   to browse the contents of the CD
9. EXIT   to exit from MAGIC INSTALL menu

4-1 INF   install Intel 865 chipset system driver

After you have completed the installation of your operation system (WINDOWS 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 license agreement appear , click Yes , the readme information appear , click Next
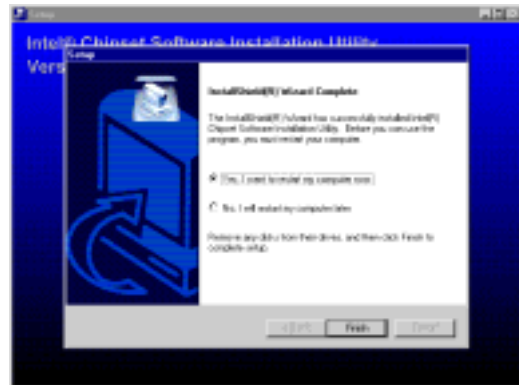
4. Select if you want computer re-started click Finish

NOTE: MAGIC INSTALL will auto detect file path X:\INTEL865\INF\SETUP.EXE
         This driver supports WINDOWS 98SE/ME/2000/XP
            (NT4.0 do not require)

4-2 SOUND install ALC AC97' Codec Audio Driver

1. Click SOUND when MAGIC INSTALL MENU appears
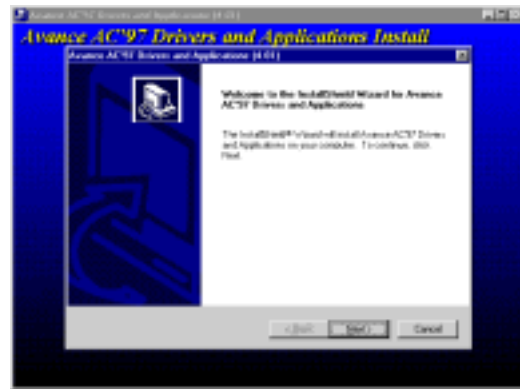
2. Then auto detect operation system language edition, click OK, start to install DRIVER
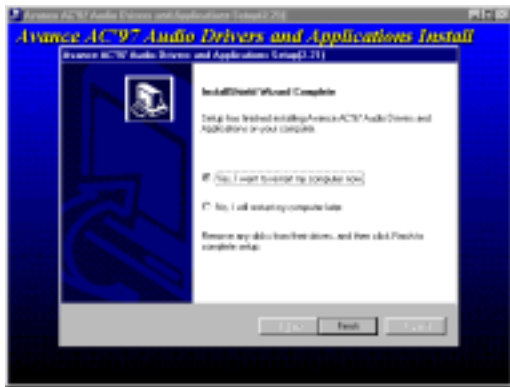
3. Click Finish and Restart Windows
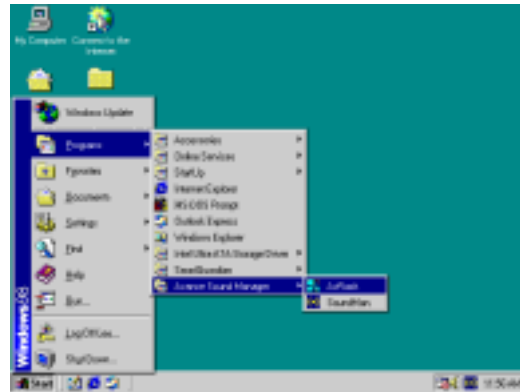
4. Click Start→Program→Avance Sound Manager→AvRack. Then AVRACK Windows appears
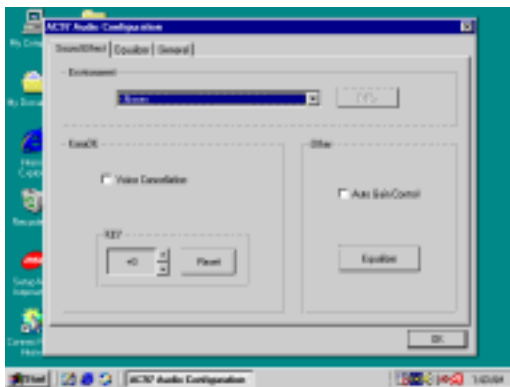
5. Sound Effect select and KaraOK Mode Function

6. Manual Sound Effect Setting

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

Note: **In Win2K/WinME users have to click Control Panel\System\Device Manager\ DVD\CD-ROM drives to Enabled digital CD Audio for the CD-ROM Device when use the SPDIF-Out digital signal.**

4-3 LAN install VIA 6105 LAN Controller Driver

WINDOWS 98SE/98ME/2000/XP Setup

1. Click LAN when Magic Install Menu appear

2. Install VIA VT6105 PCI 10/100M Fast Ethernet Driver

3. Select YES and Restart your computer
   X:\VIALAN\WIN98 (If OS is win9X)

4-4 USB2.0 install Intel USB2.0 Driver

Windows 98SE/ME USB 2.0 Driver installation

1. Click USB2.0 when Magic Install Menu appear

2. This license agreement appear, click Yes, then finish install driver , click Close and restart your computer

Windows 2000/XP USB 2.0 Driver installation

Windows 2000

Mothed1 Start Windows 2000 OS and Internet Connect, Select "Windows Update", Select Driver Update, Install Windows2000 USB2.0 Driver

Mothed2 Install Windows 2000 Service Pack 4 or later

Windows XP

Install Windows XP Service Pack 1 or later

4-5 PC-HEALTH install SMART GUARDIAN Software for Hardware Monitoring Device

1. Click PC-HEALTH when MAGIC INSTALL MENU appears

2. Click OK when SMART GUARDIAN INSTALL appears

3. This to assign the path of the file, click NEXT   4. Click FINISH after the software is installed

NOTE: MAGIC INSTALL will auto detect file path X:\INTEL865\HEALTH\SETUP.EXE
         This driver supports WINDOWS 95/98/98SE/NT4.0/2000

4-5-1   HOW TO UTILIZE PC-HEALTH

1. Click START/PROGRAMS/ITE SMART   2. You will see a real time report about FAN
   ACCESSORIES / ITE SMART GUARDIAN   SPEED, VOLTAGE and TEMPERATURE
                                             System will make a warning if any value is
                                             beyond Initial setting value
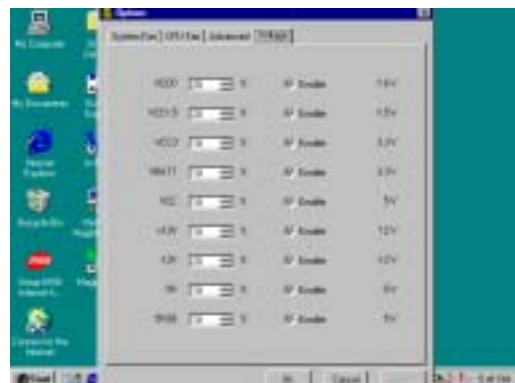
3. You may re-set temperature and voltage by
   click OPTION

4-6 MBIOS&DX9 Install BIOS Live Update Utility and DIRECTX9

1. Click Magic BIOS when Magic Install MENU appears

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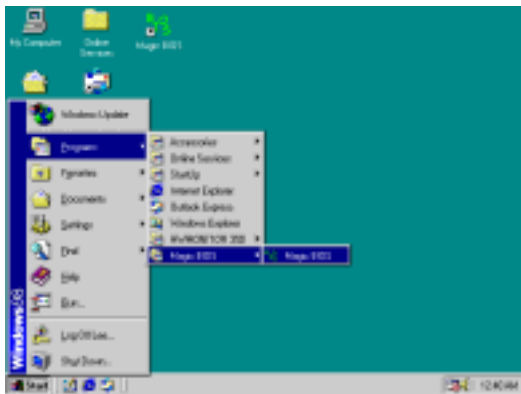
3. After finish Setup you will have a Magic BIOS icon in your screen

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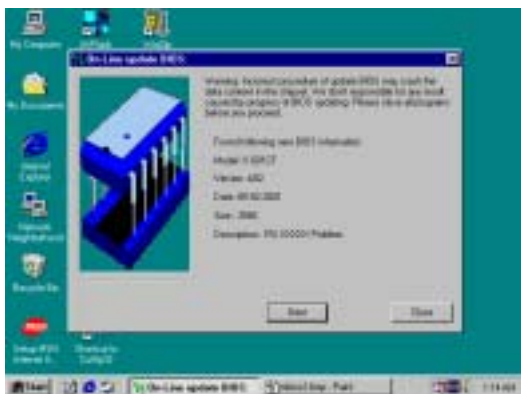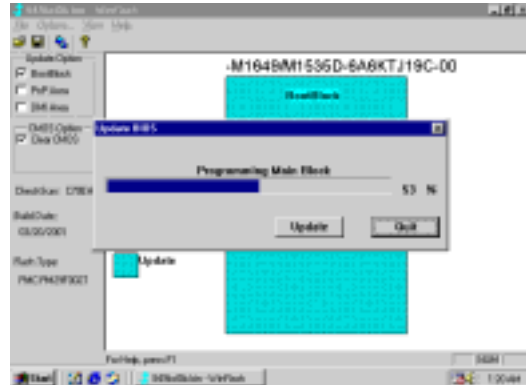

5. When On-line update BIOS the program will auto-check your BIOS version
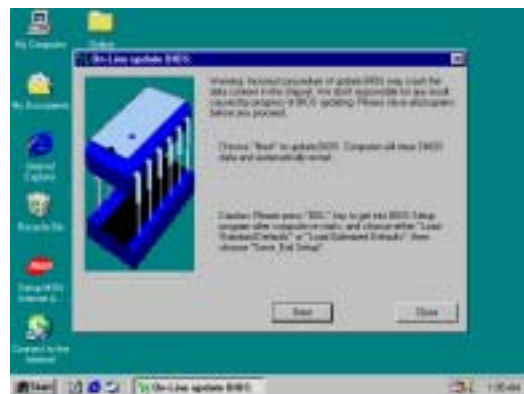
6. Click Next if you need update BIOS, after upgrade BIOS, the system will clear CMOS and automatically restart
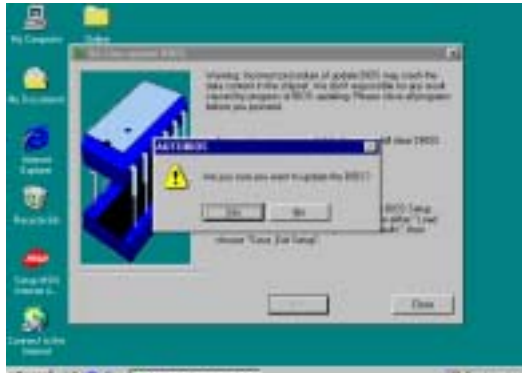
7. Click Yes if you want to update the BIOS otherwise choose No to exit

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

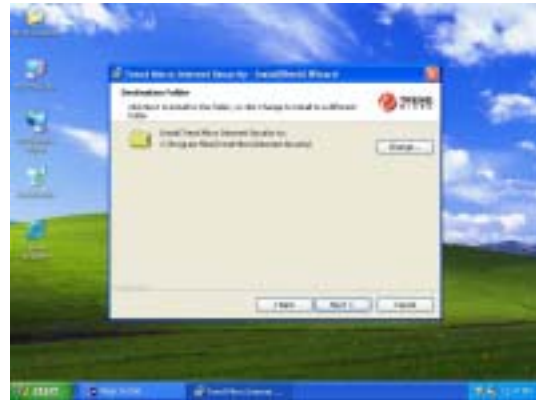## 4-7 PC-CILLIN Install PC-CILLIN 2004 Anti-virus program
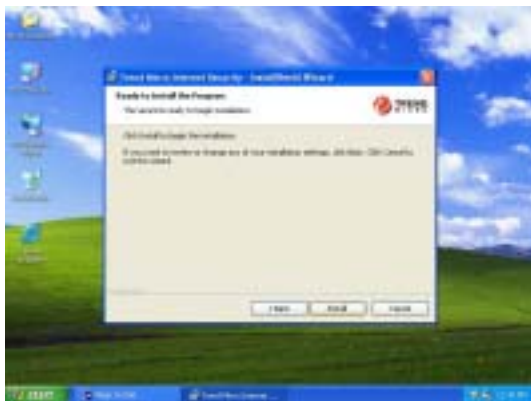

1. Click PC-CILLIN when MAGIC INSTALL MENU appear

2. Click NEXT when the "Trend Micro internet security" installshield wizard windows appear
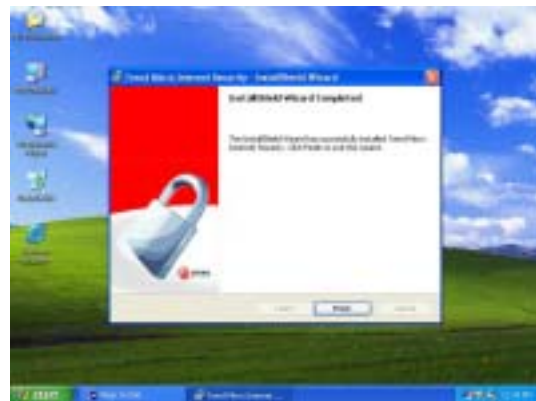
3. This is license agreement, select "I Accept the terms" and Click NEXT

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 2004 complete, Please register your information and we recommend select update item to download newest engine code and virus code

Note : **Please install ACROBAT READER, Before you read PC-CILLIN 2004 User Manual, the path at X:\acrobat\adberdr6_enu_full.exe**

4-8　HOW TO UPDATE BIOS

Before update BIOS users have to "Disable", "Flash Part Write Protect" item which in "Miscellaneous Control" of BIOS SETUP. Otherwise the system the will not allow you to upgrade BIOS by Award Flash Utility.

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 865PBA/865PBAP from our web site to your boot disc.

STEP 4. Insert your boot disc into A:,
start the computer, type "Awdflash A:\865PBAAxxx.BIN /SN/PY/CC/R"
865PBAAxxx.BIN is the file name of latest BIOS it can be 865PBAA03.BIN or 865PBAB02.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.