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80 Port Frequently Asked Questions

Below is a list of some basic POST Codes, possible problems and solutions. For more detailed information about POST Codes, refer to Appendix B in this manual.

| POST CODE | Problem | Solution |
|------------|--|--|
| FFh or CFh | <ol style="list-style-type: none">1. BIOS chip inserted incorrectly2. Incorrect BIOS update version3. Mainboard problem4. Add-on card inserted incorrectly. | <ol style="list-style-type: none">1. Reinsert the BIOS chip2. Download the correct BIOS version update from the manufacturer's Web site.3. Replace mainboard4. Remove and replace the add-on card |
| C1h - C5h | <ol style="list-style-type: none">1. Memory module inserted incorrectly2. Memory compatibility problem3. Memory module damaged | <ol style="list-style-type: none">1. Reinsert memory module2. Replace memory with correct type3. Replace memory module |
| 2Dh | <ol style="list-style-type: none">1. Error occurred in VGA BIOS2. VGA card inserted incorrectly | <ol style="list-style-type: none">1. Replace VGA card2. Reinsert the VGA card |
| 26h | Overclock error | Clear CMOS or press the insert key to power on the system |
| 07h - 12h | <ol style="list-style-type: none">1. Keyboard controller error2. RTC error | <ol style="list-style-type: none">1. Ensure that the keyboard and mouse are connected correctly.2. Replace the RTC battery. |

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Section 1

INTRODUCTION

1-1 Package Contents

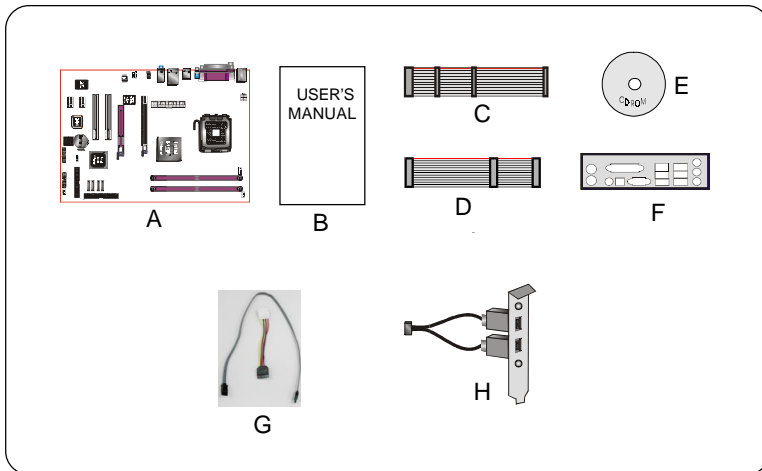
Contents

- A. Mainboard
- B. User's manual
- C. Floppy drive cable
- D. HDD drive cable
- E. CD (drivers and utilities)
- F. I/O Shield
- G. S-ATA data and power cable

Optional Items

- H. Extra USB2.0 port cable

If you need the optional item, please contact your dealer for assistance.



1-2 Mainboard Features

Brief Introduction

★ Intel® Pentium® 4 processors

The Pentium 4 processor is designed to deliver performance across applications and usages where end-users can truly appreciate and experience the performance. The Pentium 4 processor delivers this world-class performance for consumer enthusiasts and business professional desktop PC users as well as for entry-level workstation users.

Intel adds support for Hyper-Threading Technology to the Pentium 4 processor family. HT Technology allows a single, physical Pentium 4 processor to function as two logical processor for next generation multi threaded application.

For more information about all the new features the Pentium 4 delivers, check out the Intel website at <http://www.intel.com>

★ Chipset

This board is designed with Intel® 915PL chipset. The Intel® 915PL chipset consists of the Graphics Memory Controller Hub (GMCH) and the I/O Controller Hub (ICH6).

★ Dual Channel

Supports dual channel of DDR400 memory to give you twice the memory bandwidth for greater system performance.

★ PCI-Express (PCI-E)

Next generation peripheral interface to succeed to current PCI bus for the next decade. With smaller slot size and 250MB/sec(PCI-E*1) or 4GB/sec(PCI-E*16) maximum transfer, PCI-Express overcomes PCI bus bottleneck.

★ Hardware Monitoring

Hardware monitoring enables you to monitor various aspects of the system operation and status. This includes CPU temperature, voltage and fan speed in RPMs.

★ Ultra ATA100

The mainboard provides an Ultra ATA100 Bus Master IDE controller. This controller supports Ultra ATA100 protocols which are ideal to support demanding applications such as real-time video, multimedia, and a high performance operating system. A new IDE cable is required for Ultra ATA100.

★ 10/100 LAN (Optional)

This mainboard is mounted with a ethernet LAN controller. It allows the mainboard to connect to a local area network by means of a network hub.

★ GbE LAN (Optional)

The new Gigabit Ethernet LAN allows data transmission at 1,000 megabits per second (Mbps), which runs 10 times faster than conventional 10/100BASE-T Ethernet LANs.

★ Serial ATA (S-ATA)

Support Serial ATA, an evolutionary replacement for Parallel ATA IDE storage interface. Increases the peak data transfer speed up to 150MB/sec and allows future enhancements to the computing platform.

★ USB2.0

A popular USB standard for plugging in peripherals with up to 480Mbps transfer speed while maintaining backward compatibility with older USB1.1 device.

★ 6ch

Mainboard is equipped with 6 channel of audio to support Dolby Digital 5.1 audio for DVD-playback. The onboard audio jacks can be configured for normal 2 channel mode or 6 channel mode.

Special Features

BIOS Features:

& Magic Health

Reports your system hardware status for every boot-up to help detect faults early. Monitor hardware status including CPU temperature, CPU/Memory/ Chipset voltage, fan RPM speed for chassis fan, CPU fan & Power supply fan.

& EZ-Boot

Simply press "ESC" to select your bootable device. No more hassle to search the BIOS menu, change and re-start.

& PowerBIOS

Supporting a full range of overclocking setting via BIOS. Various adjustable feature include FSB/Chipset/Memory voltage tweaking.

H/W Features:

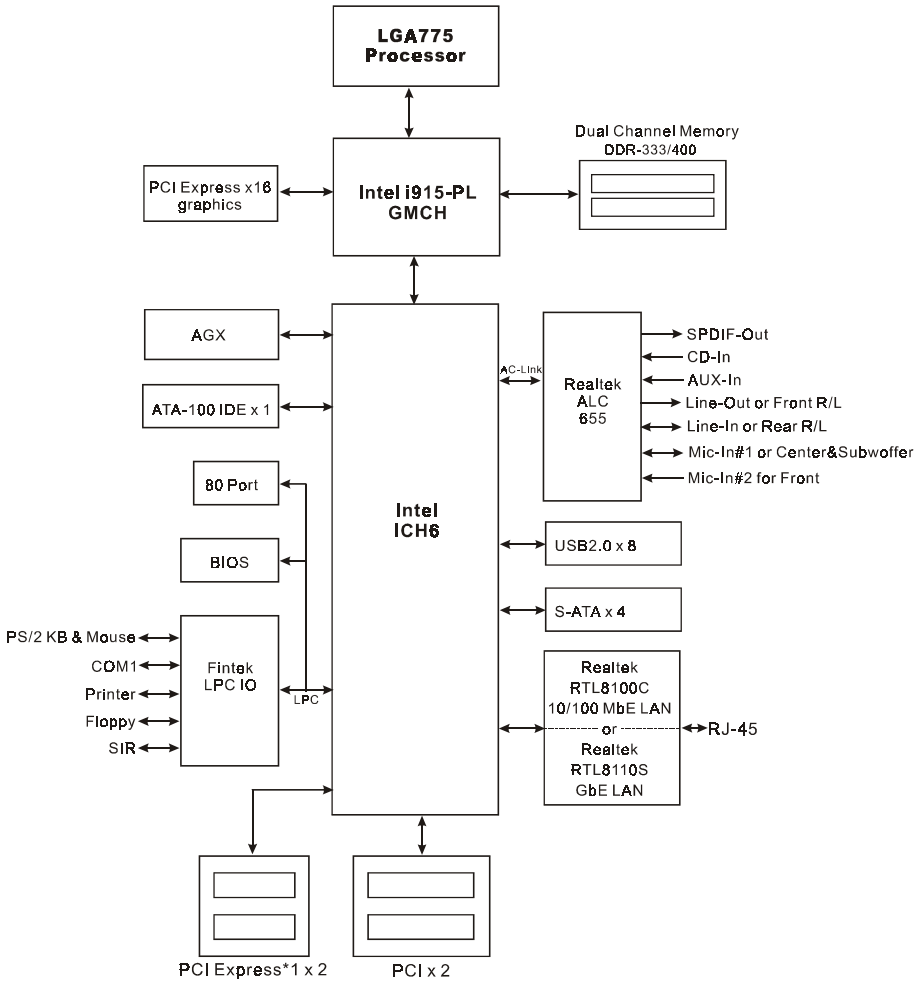
& 80 Port

An onboard LED-display trouble-shooting device, facilitating user to detect boot-up problems.

& QuickSPDIF

On board SPDIF-out connector for quick connection to multi-channel speakers. Not only removes cable cluttering but also delivers loss-free digital audio to let you enjoy DVD movies and games with crystal clear sound.

1-3 System Block Diagram



The following table of VGA cards have been tested compatible with this mainboard.

| 4X AGP Card | |
|-------------------|---|
| nVidia Geforce 2 | ELSA MX-400 32MB |
| nVidia Geforce 4 | ELSA MX-460 64MB DDR GLADIAC 517VIVO |
| | ASUS Ti-4400 128MB V8440 |
| | APT MVGA-NVG25 BAUTi-4600 128MB |
| ATi | ATI Radeon 8500DDR 64MB |
| 8X AGP Card | |
| nVidia Geforce FX | Albatron GeForce FX5200EP 128MB DDR |
| | Ennyah EF550 G FX5500128MB DDR TV+DVI |
| | ELSA Gladiac FX736EX Geforce FX5700/Ultra128MB DDR TV+DVI |
| | Leadtek WinFast A350 Ultra TDH MYVIVO FX5900/256MB |
| | Leadtek WinFast A400 Ultra FX6800 256MB |
| | ASUS Geforce FX5700/Ultra V9570/TD/N/128M/A |
| nVidia Geforce 4 | Geforce4 MX 440 64MB/TV-Out |
| | EM4000L GF4 MX4000L 128M DDR TV |
| | Ennyah GF4 MX440B-8X 64MB DDR TV |
| ATi | Power Color Radeon 9700 XR9700-C3/P128MB DDR |
| SIS | Power Color Xabre 400 64MB DDR XP400A-B3 |
| | Xabre 600 Ultra 64MB DDR TRIPLEX |

Please refer to the manufacturer's website for updated list of compatible VGA cards.

Section 2

SPECIFICATION

Mainboard Specification

● Processor

ŠSupport Intel® Pentium® 4 5xx/6xx series, P4EE processors up to 3.80GHz in LGA775 socket with 533/800 MHz front-side system bus

ŠSupport Intel® Celeron® D 3xx series processors up to 3.2+GHz in LGA775 socket with 533 MHz front-side system bus

ŠSupport Intel® EM64T® 64-bit Computing platform

ŠSupports Hyper-Threading Technology

See <<http://www.intel.com/info/hyperthreading>> for information including details on which processor support HT Technology.

● Chipset

ŠIntel® 915PL Chipset (915PL + ICH6)

● Main Memory

ŠTwo 184-pin DDR SDRAM DIMM sockets

ŠSupport 2.5v DDR-333/400 DIMMs with dual channel architecture

ŠSupport single-sided or double-sided, non-ECC, DIMMs with 256Mb/512Mb/1Gb devices

ŠSupport up to 2GB system memory

● Expansion Slots

ŠTwo PCI connectors compliant with PCI v2.3

ŠTwo PCI-E x1 connectors compliant with PCI Express 1.0a

ŠOne PCI-E x16 connectors compliant with PCI Express 1.0a

ŠOne 1.5v AGX (Advanced Graphics Xtender) slot for AGP card support

● IDE

ŠOne IDE interface (up to 2 IDE devices) with UDMA-33, ATA-660 support from embedded IDE controller

Specification

● USB

ŠEight USB connectors compliant with USB2.0 from embedded USB controller (4 connectors at rear panel)

● S-ATA

ŠFour S-ATA ports with up to 150MBps bandwidth

● LAN

Š10/100Mb Ethernet from onboard Realtek RTL8100C PCI controller, or 1Gb Ethernet from onboard Realtek RTL8110 PCI controller

● Audio

ŠOnboard Realtek ALC-655 selectable 2 or 6-CH audio CODEC (AC97 v2.3 compliant)

- Support CD-In, AUX-In
- Coaxial S/PDIF-out available on rear panel
- Support Jack detection for fool-proof audio device installation
- Rear panel audio jacks configuration:

| Audio Jack Color | | |
|------------------|----------|------------------|
| | Line-in | Rear stereo-out |
| | Line-out | Front stereo-out |
| | Mic-in | Center&Subwoofer |

● I/O

ŠOnboard Fintek LPC bus I/O controller

ŠLegacy peripheral interface for PS/2 keyboard & mouse, FDD, Parallel, Serial, and IrDA (v1.0 compliant)

ŠSupport Hardware Monitoring for fan speed monitoring, CPU/System temperature

ŠIntelligent fan speed control for CPU-fan (PWM) for quiet operation

● BIOS

ŠFlash EEPROM with Award Plug&Play BIOS

ŠSupport EZ Boot for fast bootable device selection

ŠSupport Magic Health for system hardware status report during system boot-up

- Peripheral Interfaces

-) At Rear Panel

- Š PS/2 keyboard and mouse ports
 - Š **One** Parallel (printer) port
 - Š **One** S/PDIF-Out Coaxial jack
 - Š **One** Serial port
 - Š **One** RJ45 LAN connector
 - Š **Four** USB2.0 ports
 - Š **Three** Audio jacks

-) Onboard connector and pin-header

- Š **One** floppy drive connector
 - Š **One** ATA-100 IDE connector
 - Š **Four** extra USB2.0 ports
 - Š **One** CD-IN and AUX-IN connector
 - Š **One** IR connector
 - Š **Four** S-ATA connectors
 - Š **Three** Fan connectors

- Front Panel Controller

- Š Supports Reset & Soft-Off switches
 - Š Supports HDD & Power LEDs
 - Š Supports PC speaker
 - Š Supports Front Panel Audio connector

- Special Features

- Š Support KBPO function – Keyboard power on, turn on the computer from keyboard
 - Š Support Wake-On-LAN by PME
 - Š Onboard 80 Port LED display for system debugging
 - Š Support Asynchronous clocking mode between FSB and PCI/PCI-E

• PowerBIOS for excellent overclocking features:

- Programmable FSB and PCI Clock output frequency 1MHz fine tuning
- Support BIOS adjustable CPU multiplier, FSB clock, PCI-E x16 clock, DIMM frequency
- Support BIOS adjustable CPU Core voltage, Chipset voltage, DIMM voltage settings

● Form Factor

• 305mm x 220mm ATX size

Easy Installation Procedure

The following must be completed before powering on your new system:

- 3-1. CPU Installation
- 3-2. Jumper Settings
- 3-3. System Memory
- 3-4. Expansion Slots
- 3-5. Device Connectors

3-1 CPU Installation



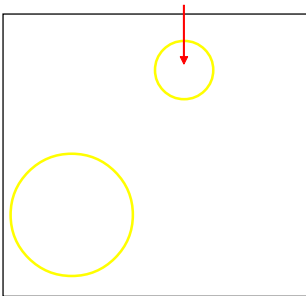
<Figure 1>

Step 1

Carefully remove the plastic protection plate from the socket.

Warning:

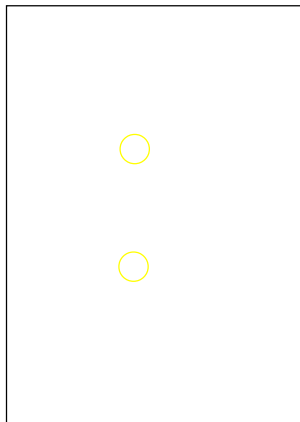
The pins inside the CPU socket are fragile and are easily broken. Be careful not to touch them when installing the CPU.



<Figure 2>

Step 2

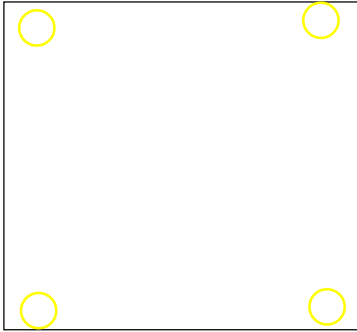
Open the socket by releasing the actuation lever, and press downwards at the tip shown by the arrow.



<Figure 3>

Step 3

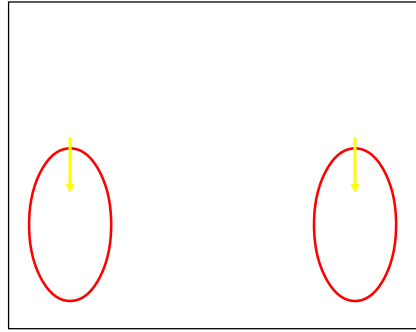
Before inserting the CPU, align the CPU according to the key slots shown in the picture. Gently place the CPU into the socket and make sure it is fully seated.



<Figure 4>

Step 4

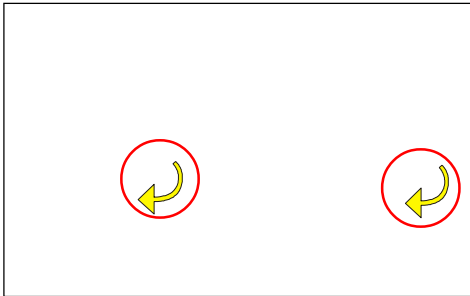
- a) Put the CPU lid on the socket, and close the socket by lowering and locking the actuation lever.
- b) Apply thermal compound to the top of the CPU and into the four holes around CPU area to install the cooler as shown.



<Figure 5>

Step 5

- a) Place the CPU cooler on top of the socket. Press its clips down firmly until it is completely seated in the hole.
- b) Rotate the clips 90 degrees to lock the CPU cooler in place.
- c) Plug the cooler fan power into the mainboard's CPU fan connector. The installation is complete.



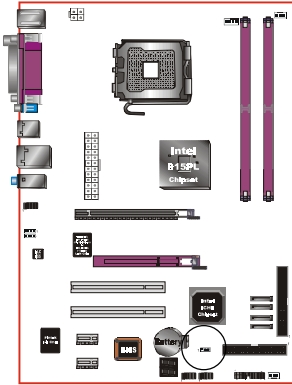
<Figure 6>

Step 6

CAUTION:

- Installing with incorrect CPU cooler and heatsink assemblies may damage the CPU. Use Intel's thermal solution shown in the illustrations above: an active heatsink; an extruded aluminum heatsink base; and a fan attached to the top of the fin array.
- Apply thermal compound or paste to the CPU to avoid CPU overheating and damage.
- In accordance with Intel guidelines specifications, do not install a CPU over 20 times to avoid damaging the pins on the CPU socket.

3-2 Jumper Settings



JCMOS: Clear CMOS data Jumper

If the CMOS data becomes corrupted or you forgot the supervisor or user password, clear the CMOS data to reconfigure the system back to the default values stored in the ROM BIOS.



Settings:

- 1-2: Normal (Default)
- 2-3: Clear CMOS

To CMOS Clear data, please follow the steps below.

1. Turn off the system.
 2. Change the jumper from “1-2” to “2-3” position for a few seconds.
 3. Replace the jumper back to the “1-2” position.
 4. Turn on the system and hold down the key to enter BIOS setup.
-

3-3 System Memory Configuration

The mainboard accommodates two 184-pin DDR DIMM sockets.

- Supports up to 2.0GB of 333/400MHz DDR SDRAM.
- Supports dual channel memory interface.
- Supports non-ECC memory and non-Registered DIMMs only.
- Supports 256Mb/512Mb/1Gb DDR technologies in x8 and x16 devices only.
- SPD (Serial Presence Detect) scheme for DIMM detection support.
- Supports configurations defined in the JEDEC DDR DIMM specification only.

Memory configurations supported:

| Slot No | 1 DIMM | | 2 DIMMs |
|---------|--------|-------|---------|
| DIMM#1 | DS/SS | | DS/SS |
| DIMM#2 | | DS/SS | DS/SS |

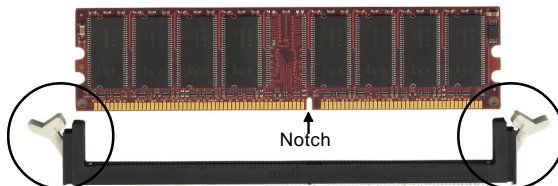
* DS - Double-sided DIMM, * SS - Single-sided DIMM

NOTES:

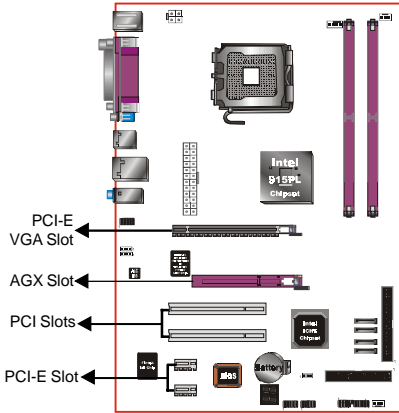
- Using non-compliant memory with higher bus speeds (overclocking) may severely compromise the integrity of the system.

Memory Installation :

- ① To install, align the notch on the DIMM module with the connector.
- ② Press straight down as shown in the figure below until the white clips close and the module fits tightly into the DIMM socket.



3-4 Expansion Slots



PCI-E VGA Slot

The elongated PCI-E*16 is intended for PCI-E VGA card installation.

AGX Slot

The mainboard is equipped with one 1.5v AGX (Advanced Graphics Xtender) slot for AGP card support.

PCI-E Slots

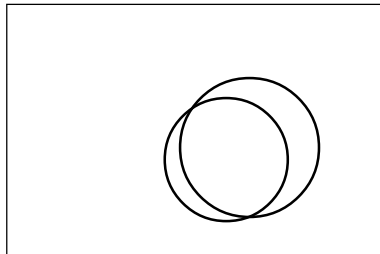
The mainboard is equipped with two PCI-E*1 compliant with PCI Express 1.0a.

PCI Slots

The mainboard is equipped with two PCI slots.

VGA Card Installation Caution

1. Remove the bracket (on the PC case) for the slot you intend to use.
2. Firmly press down the card into the slot until it is completely seated. Ensure the VGA slot clicker is locked as shown in the picture below.



3. Secure the card's bracket to the PC case with a screw.

3-5 Device Connectors

The I/O back panel for this mainboard is shown below. When installing the mainboard into the computer case, use the bundled I/O shield to protect this back panel.

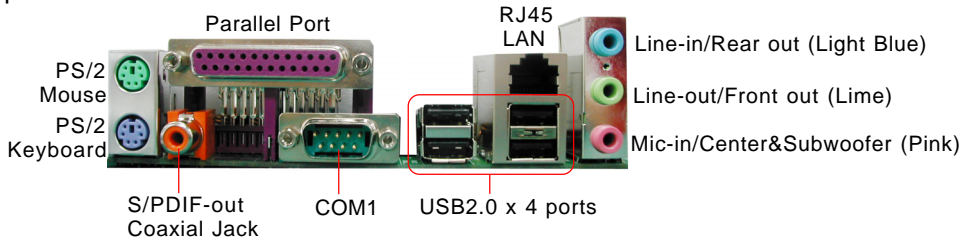
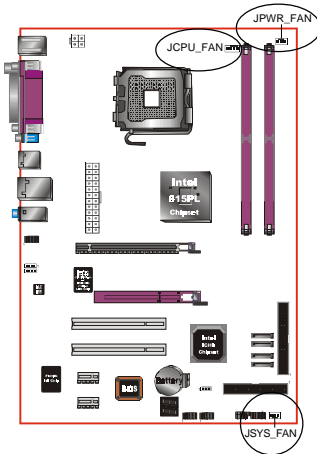


Figure 7 - I/O Ports



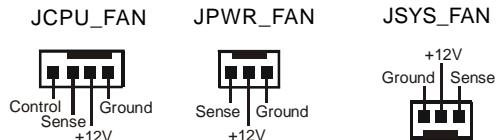
JCPU_FAN / JPWR_FAN / JSYS_FAN:

CPU/Power/Chassis Fan Power Connectors

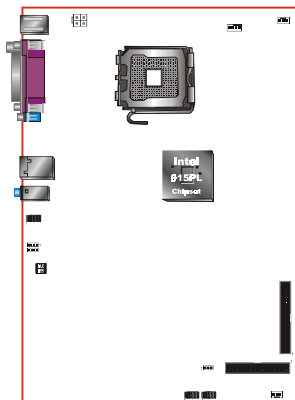
JCPU_FAN: The CPU must be kept cool by using a heatsink with fan assembly.

JPWR_FAN: If you are installing an additional fan in the unit, connect to this fan connector.

JSYS_FAN: The chassis fan will provide adequate airflow throughout the chassis to prevent overheating the CPU.



This mainboard is equipped with intelligent fan speed control. Refer to the PC Health Status submenu of the BIOS.





User's Manual

**Intel *i915PL* mainboard
for Intel Socket 775 processor**

TRADEMARK

All products and company names are trademarks or registered trademarks of their respective holders.

These specifications are subject to change without notice.

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August 29, 2005*