PS/2 Mouse Connector

SPP/EPP/ECP Parallel Port

RJ45 LAN Jack

Rear SUR

Line-In

USB 2.0 Ports

Speaker Out

Center/ Subwoofer

MIC-In

PS/2 Keyboard Connector

COM 1 Port

VGA Port

USB 2.0 Ports

Side SUR

Realtek Gigabit LAN Chip

S/PDIF Connector

Onboard HD Codec

CD_IN Connector

PCI Express x1 Slot

Front Audio Connector

STBY LED

32-bit PCI Expansion Slots x2

Game Connector

IRDA Connector

USB 2.0 Connectors x2

BOOT LED

Serial ATA Ports x4

Supports 150 MB/s Transfer Rate

JP14 CMOS Data Clear Jumper

SYSFAN2 Connector

Case Open Connector

Front Panel Connector

DieHard BIOS Lite

IDE Connector
(ATA 33/66/100 supported)

JP28 PS2 KB/Mouse Wakeup Jumper

4-pin 12V ATX Power Connector

SYSFAN1 Connector

Functional Polymer Capacitor

PCI Express x 16 Graphics Slot (8.0GB/s)

LGA 775 CPU Socket with Voltage and Frequency Auto-detection that supports Intel® FC-LGA4 CPU

Intel® 915G / ICH6 (i915Gm-PL) 915P / ICH6 (i915Pm-PL) Chipsets that support 800 MHz FSB, DDR 400 and PCI Express x16

CPUFAN Connector

184-pin DIMMsx4 support DDR400/333 Max. To 4GB

COM2 Connector (i915Gm-PL)

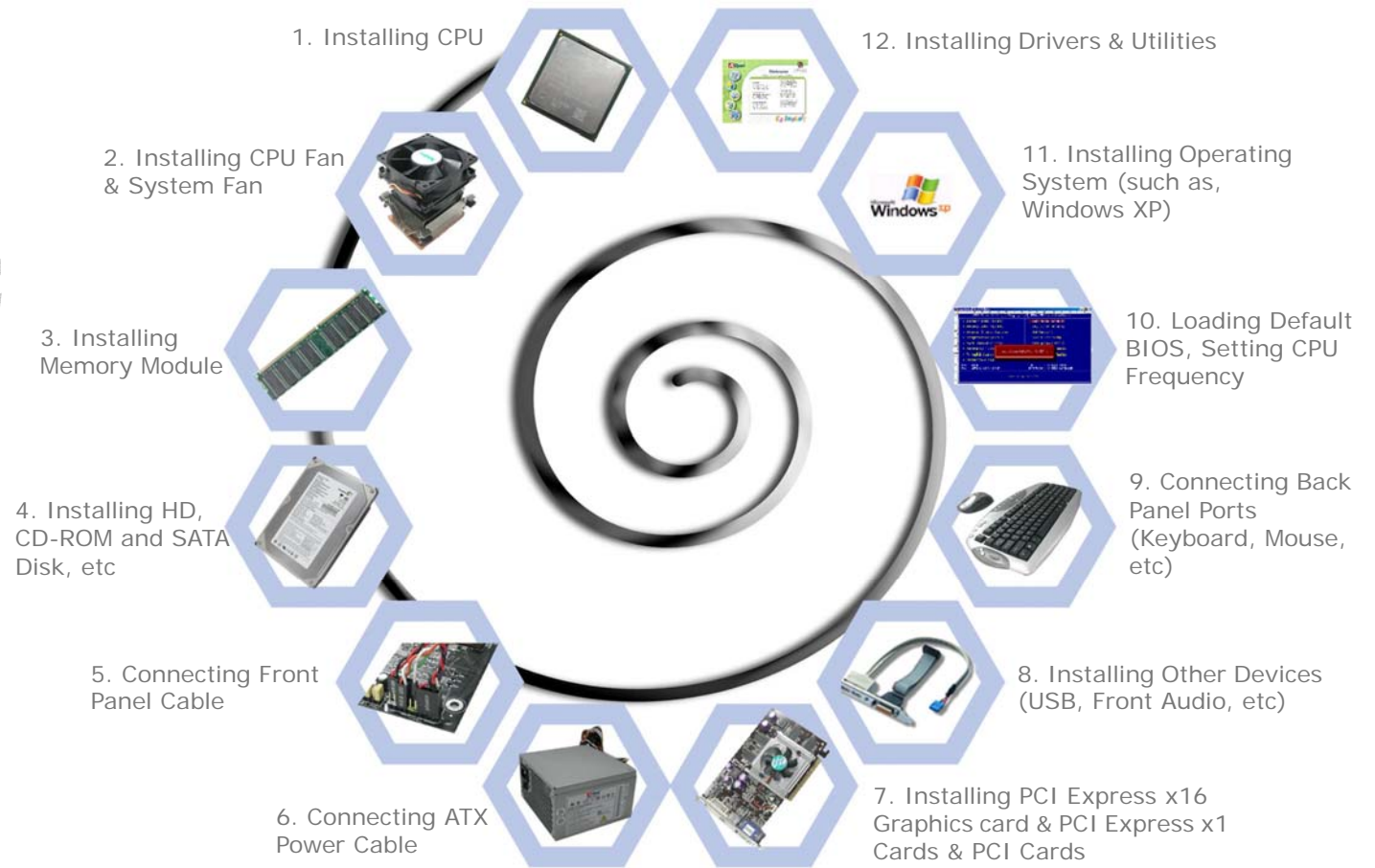ATX Power Connector

FDD Connector

# Before You Start

Everything you need to boot this motherboard is included in this Easy Installation Guide. For more information, a complete **Online User's Manual** can be found in the **Bonus Pack CD**. Thanks for the help of saving our earth.

# Accessory Checklist

- *Easy Installation Guide x 1*
- *80-Wire IDE Cable x 1*
- *Floppy Drive Cable x 1*
- *Serial ATA Cable x 1*
- *Serial ATA Power Cable x 1*
- *Back Panel I/O Shield x 1*
- *Bonus Pack CD x 1*

# Installing By Yourself

1. Installing CPU

2. Installing CPU Fan & System Fan

3. Installing Memory Module

4. Installing HD, CD-ROM and SATA Disk, etc

5. Connecting Front Panel Cable

6. Connecting ATX Power Cable

7. Installing PCI Express x16 Graphics card & PCI Express x1 Cards & PCI Cards

8. Installing Other Devices (USB, Front Audio, etc)

9. Connecting Back Panel Ports (Keyboard, Mouse, etc)

10. Loading Default BIOS, Setting CPU Frequency

11. Installing Operating System (such as, Windows XP)

12. Installing Drivers & Utilities

Dual Channel  Flash EzWin Flash  CPU 1MHz Stepping CPU  Gigabit LAN

EzInstall  V4 Power Engine  PCI Express  Serial ATA
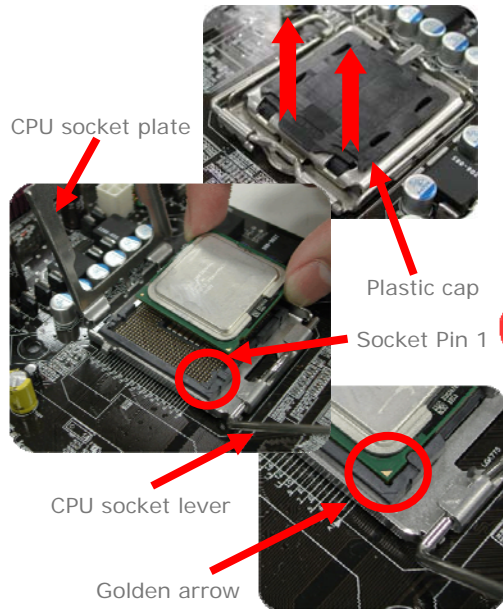
## 1. Installing CPU

This socket supports FC-LGA4 CPU, which is the latest CPU package developed by Intel. Other forms of CPU package are impossible to be fitted in.

CPU socket plate

Plastic cap

Socket Pin 1

CPU socket lever

Golden arrow

1. Pull CPU socket lever and plate up.
2. Remove plastic cap from CPU socket plate.
3. Locate Pin 1 in the socket and look for a golden arrow on the CPU upper interface. Match Pin 1 and golden arrow. Then insert the CPU into the socket.
4. Press down CPU socket plate and lever to finish CPU installation.

**Warning:** *If you do not match the CPU socket Pin 1 and CPU golden arrow well, you may damage the CPU. And please don't touch CPU socket pins when installing CPU.*

**Note:** *It's strongly recommended by Intel to use thermal paste properly to avoid over-heat generated From Prescott CPU.*

## 2. Installing CPU & System Fans

Plug in the CPU fan cable to the 4-pin CPUFAN connector. If you have chassis fan, you can also plug it in SYSFAN1 or SYSFAN2 connector.

GND
+12V
SENSOR

SYSFAN1 Connector

PWM
SENSOR
+12V
GND

CPUFAN Connector

GND
+12V
SENSOR

SYSFAN2 Connector
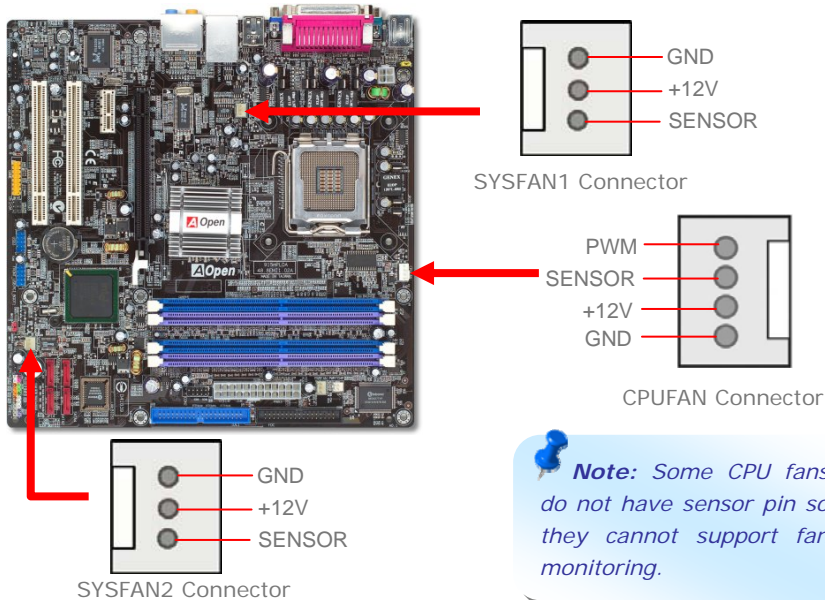
**Note:** *Some CPU fans do not have sensor pin so they cannot support fan monitoring.*

## 3. Installing Memory Modules

DIMM slots are designed in Navy Blue and Electronic Blue which are very easy to recognize. Insert the module straight down to the DIMM slot with both hands and press down firmly until the DIMM module is securely in place.

Tab

Pin 1

Key
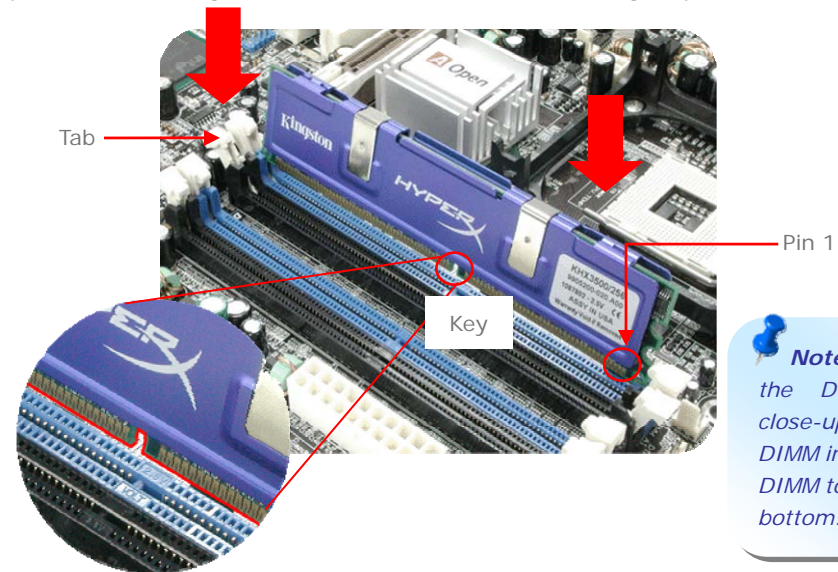
**Note:** *The tabs of the DIMM slot will close-up to hold the DIMM in place when the DIMM touches the slot's bottom.*

## 4. Connecting IDE and Floppy Cables

Connect 34-pin floppy cable and 40-pin, 80-wire IDE cable to floppy connector FDD and IDE connector. Be careful of the pin1 orientation. Wrong orientation may cause system damage.

Pin 1

Primary Master (1st)

Primary Slave (2nd)

ATA 66/100 IDE Connector

Pin 1
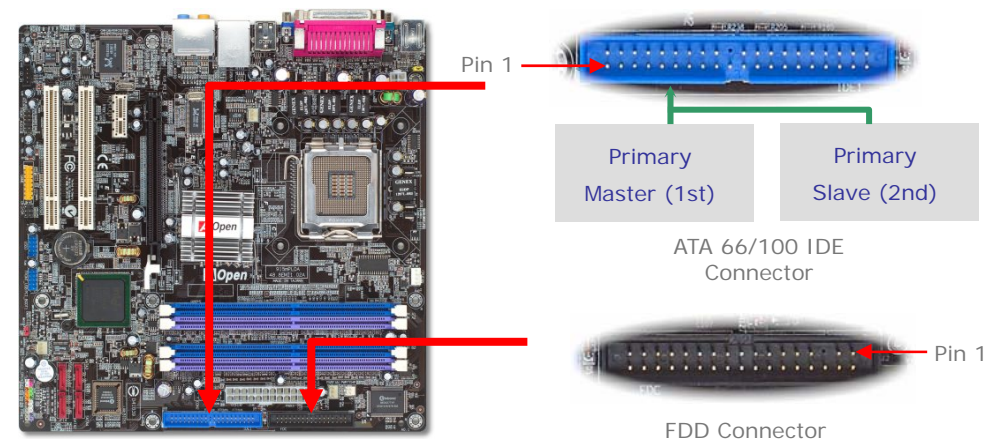
FDD Connector

## 5. Connecting Front Panel cable

Attach the power LED, speaker, and reset switch connectors to the corresponding pins. If you enable "Suspend Mode" item in BIOS Setup, the ACPI & Power LED will keep flashing while the system is in suspend mode.

Locate the power switch cable from your ATX housing. It is 2-pin female connector from the housing front panel. Plug this connector to the soft-power switch connector marked *SPWR*.
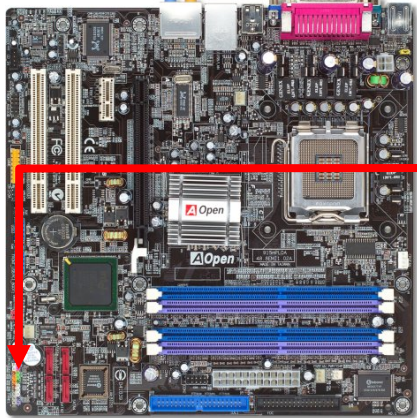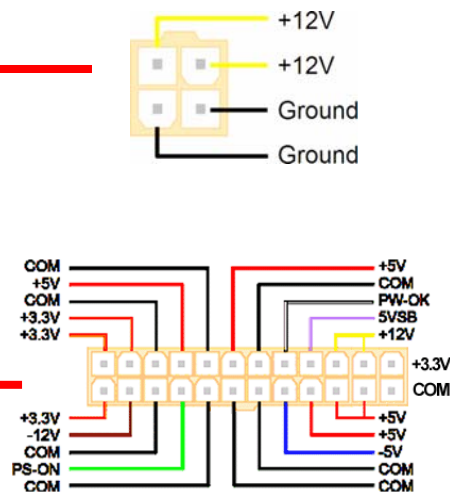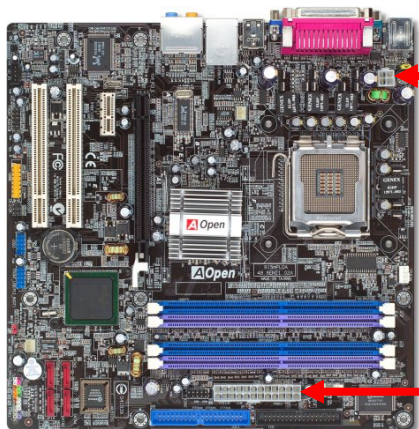
| | | |
|---|---|---|
| NC | | Power Switch |
| NC | | GND |
| +5V | | Power LED- |
| HDD LED | | GND |
| HDD LED | | Power LED+ |
| +5V | | NC |
| +5V | | GND |
| GND | | GND |
| NC | | RESET |
| SPEAKER | | GND |

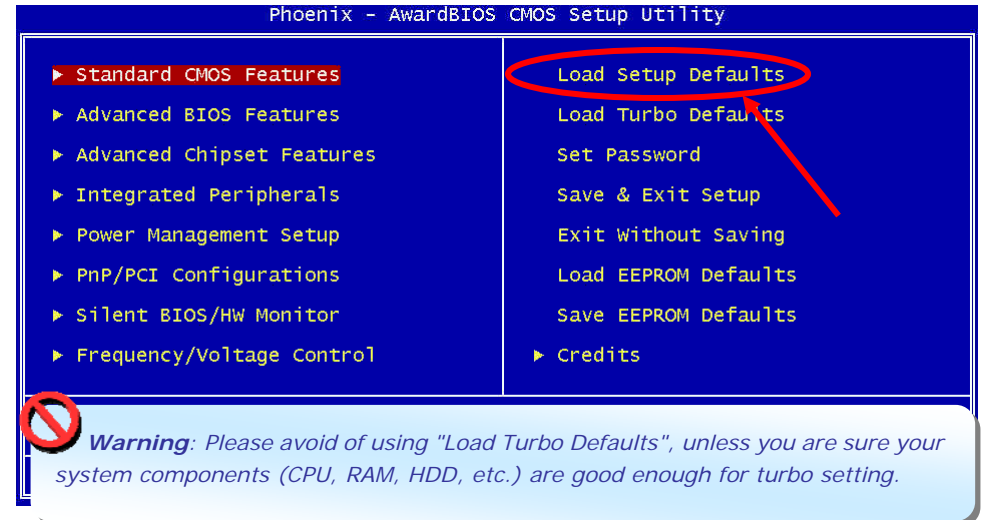Front Panel Connector

## 6. Connecting ATX Power Cables

This motherboard comes with a 24-pin and 4-pin ATX power connector as shown below. Make sure you plug in the right direction. We strongly recommend you to insert the 4-pin connector before connecting the 24-pin connector.

+12V
+12V
Ground
Ground

| COM | +5V |
|---|---|
| +5V | COM |
| COM | PW-OK |
| +3.3V | 5VSB |
| +3.3V | +12V |
| | +3.3V |
| | COM |
| +3.3V | +5V |
| -12V | +5V |
| COM | -5V |
| PS-ON | COM |
| COM | COM |

## 7. Power-on and Loading BIOS Setup

**Del**

After you finish the setting of jumpers and connect correct cables. Power on and enter the BIOS Setup, press <Del> during POST (Power On Self Test). Choose "Load Setup Defaults" for recommended optimal performance.

```
          Phoenix - AwardBIOS CMOS Setup Utility

 ▶ Standard CMOS Features          Load Setup Defaults
 ▶ Advanced BIOS Features          Load Turbo Defaults
 ▶ Advanced Chipset Features       Set Password
 ▶ Integrated Peripherals          Save & Exit Setup
 ▶ Power Management Setup          Exit Without Saving
 ▶ PnP/PCI Configurations          Load EEPROM Defaults
 ▶ Silent BIOS/HW Monitor         Save EEPROM Defaults
 ▶ Frequency/Voltage Control      ▶ Credits
```

*Warning: Please avoid of using "Load Turbo Defaults", unless you are sure your system components (CPU, RAM, HDD, etc.) are good enough for turbo setting.*

## 8. AOpen EzInstall and Bonus Pack CD

You can use the autorun menu of Bonus CD disc. Choose the utility and driver from the icons at left side, and then click on the "**GO**" button to complete installation automatically.

Install driver

Install utility

Browse

Read me

Exit CD

Click to install online manual

**AOpen**
Install User manual

**Welcome**
Thank you for choosing AOpen i915Gm-PL

**AOpen**
**Install Driver**
☑ Intel Chipset Software Installation Utility
☑ Intel Graphics Media Accelerator Driver
☑ Realtek RTL8110 Gigabit Ethernet NIC Driver
☑ Realtek High Definition Audio Driver

**Back**

GO

Ez Install

## Setting CPU Voltage & Frequency

### Setting CPU Core Voltage

This motherboard supports Voltage ID (VID) function to detect CPU voltage automatically during power-on. It's not necessary to set CPU core voltage.

### Setting CPU Frequency

This motherboard is CPU jumper-less design, you can set CPU frequency through 1MHz stepping CPU Overclocking in the BIOS. CPU Core Frequency = CPU FSB clock x CPU Ratio. However, all CPU now selling in the market belong to "Fixed Multiplier". That means users can not adjust the CPU Ratio but only change CPU FSB clock to achieve overclocking.

(Users do the overclocking at their own risk!!)

*BIOS Setup > Frequency / Voltage Control > CPU Speed Setup*

| | |
|---|---|
| CPU Ratio | 8x, 10x... 24x, 25x, 26x, 27x, 28x |
| CPU FSB (Adjustment manually) | FSB = 100MHz-400MHz by 1MHz Stepping CPU Overclocking |

| Processor Number | Processor Frequency | FSB | CPU Ratio | Cache |
|---|---|---|---|---|
| **5 Series** | | | | |
| 570 | 3.80G | 800MHZ | 19x | 1MB L2 |
| 560 | 3.60G | 800MHZ | 18x | 1MB L2 |
| 550 | 3.40G | 800MHZ | 17x | 1MB L2 |
| 540 | 3.20G | 800MHZ | 16x | 1MB L2 |
| 530 | 3.00G | 800MHZ | 15x | 1MB L2 |
| 520 | 2.80G | 800MHZ | 14x | 1MB L2 |
| **3 Series** | | | | |
| 350 | 3.20G | 533MHZ | 24x | 256K L2 |
| 345 | 3.06G | 533MHZ | 23x | 256K L2 |
| 340 | 2.93G | 533MHZ | 22x | 256K L2 |
| 335 | 2.80G | 533MHZ | 21x | 256K L2 |

**Note:** With CPU speed changing rapidly, there might be faster CPU on the market by the time you received this installation guide. This table is kindly for your references only.

*Note: Some CPU fans do not have sensor pin so they cannot support fan monitoring.*

*Note: Intel 915G / 915p chipset support LGA 775 processor. LGA 775 processor could detect the clock ratio automatically; you may not be able to adjust the clock ratio in BIOS manual.*

*Warning: Intel 915G / 915p chipset support maximum 800MHz (200MHz*4) system bus; higher clock setting may cause serious system damage.*

## JP14 Clear CMOS

You can clear CMOS to restore system default setting. To clear the CMOS, follow the procedure below.

1. Turn off the system and unplug the AC power.
2. Remove ATX power cable from connector PWR3.
3. Locate JP14 and short pins 2-3 for a few seconds.
4. Return JP14 to its normal setting by shorting pin 1 & pin 2.
5. Connect ATX power cable back to connector PWR3.

Pin 1

1          1

Normal     Clear CMOS
(Default)
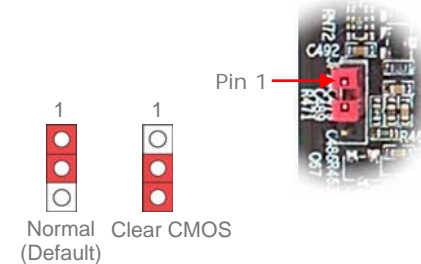
*Tip: When should I Clear CMOS?*

*1. Boot fails because of overclocking...*

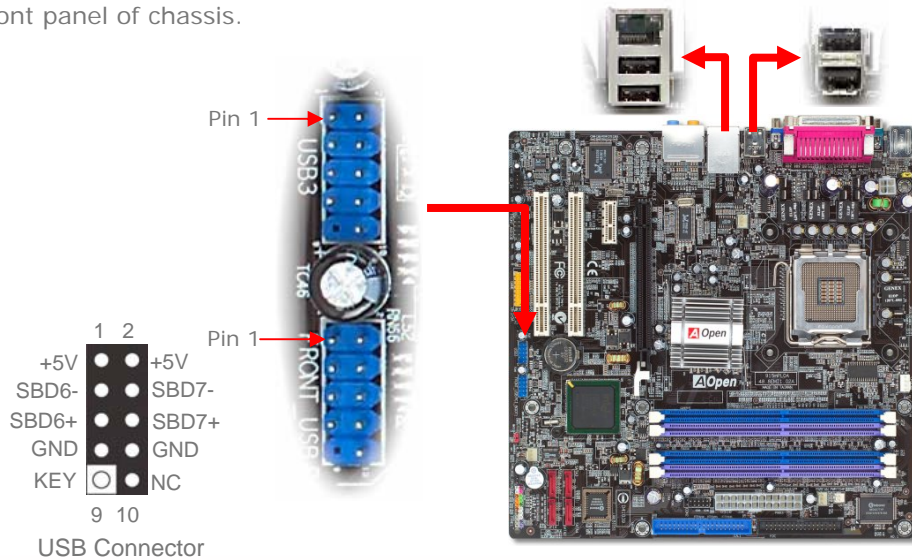*2. Forget password...*

*3. Troubleshooting...*

## JP28 Keyboard/Mouse Wakeup Jumper

This motherboard provides keyboard / mouse wake-up function. You can use JP28 to enable or disable this function, which could resume your system from suspend mode with keyboard or mouse. The factory default setting is "Disable" (1-2), and you may enable this function by setting the jumper to 2-3.

Pin 1

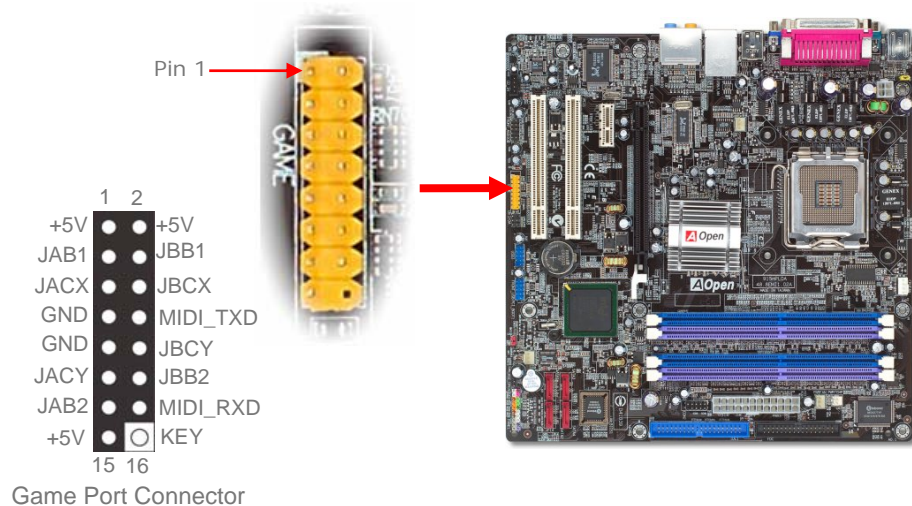1          1

Disable    Enable
(Default)
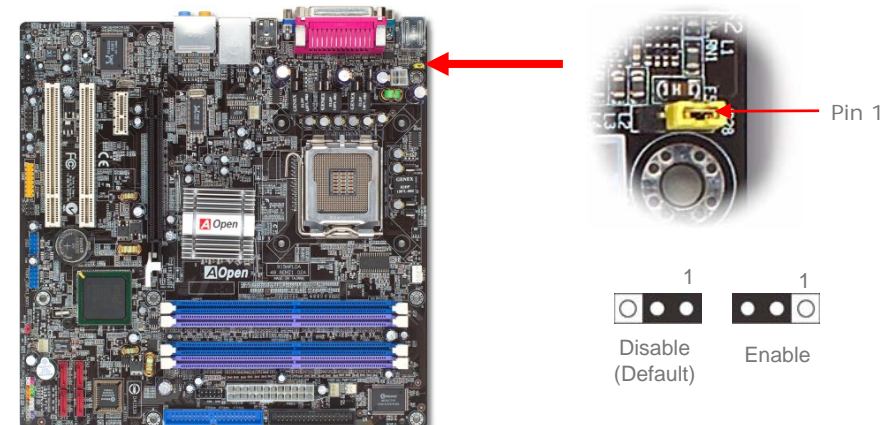
## USB 2.0 Connectors

This motherboard provides eight USB 2.0 ports to connect USB devices, such as mouse, keyboard, modem, printer, etc. There are four ports on the back panel. You can use proper cables to connect the Front USB connector to USB modules or front panel of chassis.

Pin 1

Pin 1

| | 1 | 2 | |
|---|---|---|---|
| +5V | ● | ● | +5V |
| SBD6- | ● | ● | SBD7- |
| SBD6+ | ● | ● | SBD7+ |
| GND | ● | ● | GND |
| KEY | ○ | ● | NC |
| | 9 | 10 | |

USB Connector

## Front Audio Connectors

If the housing is designed with an audio port on the front panel, you'll be able to connect onboard audio to front panel through this connector. *Please be informed that to have front audio ports work properly, the front audio panel of the housing should be designed for High definition Audio jack. If the front audio panel is not designed for High Definition Audio jack, we strongly recommend you to connect the microphone to the back panel of the motherboard.*

Pin 1

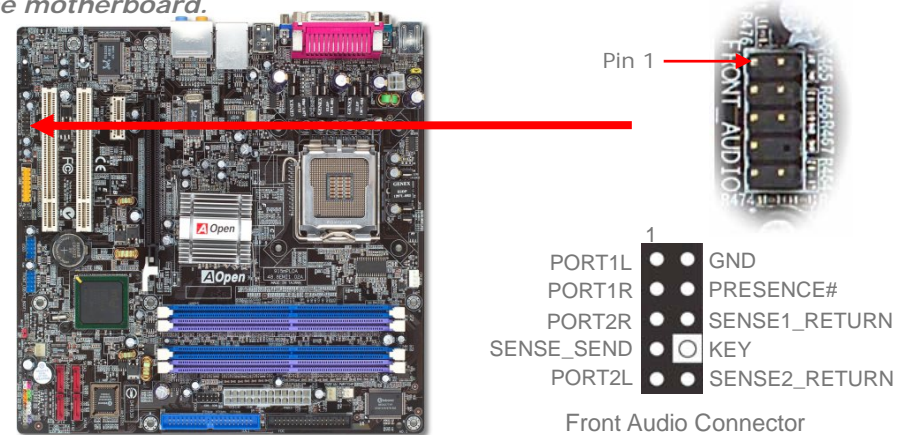| | | 1 | | |
|---|---|---|---|---|
| PORT1L | ● | ● | GND |
| PORT1R | ● | ● | PRESENCE# |
| PORT2R | ● | ● | SENSE1_RETURN |
| SENSE_SEND | ● | ○ | KEY |
| PORT2L | ● | ● | SENSE2_RETURN |

Front Audio Connector

## Game Port

This motherboard comes with a game port (Joystick-Midi) for you to connect any midi devices or joysticks. To use this function you have to have a joystick module and connect it with a game port cable to this port on the motherboard.

Pin 1

| | 1 | 2 | |
|---|---|---|---|
| +5V | ● | ● | +5V |
| JAB1 | ● | ● | JBB1 |
| JACX | ● | ● | JBCX |
| GND | ● | ● | MIDI_TXD |
| GND | ● | ● | JBCY |
| JACY | ● | ● | JBB2 |
| JAB2 | ● | ● | MIDI_RXD |
| +5V | ● | ○ | KEY |
| | 15 | 16 | |

Game Port Connector

## IRDA Connector

The IrDA connector can be configured to support wireless infrared module, with this module and application software such as Laplink or Windows Direct Cable Connection, user can transfer files to or from laptops, notebooks, PDA devices and printers. This connector supports both HPSIR (115.2Kbps, 2 meters) and ASK-IR (56Kbps).
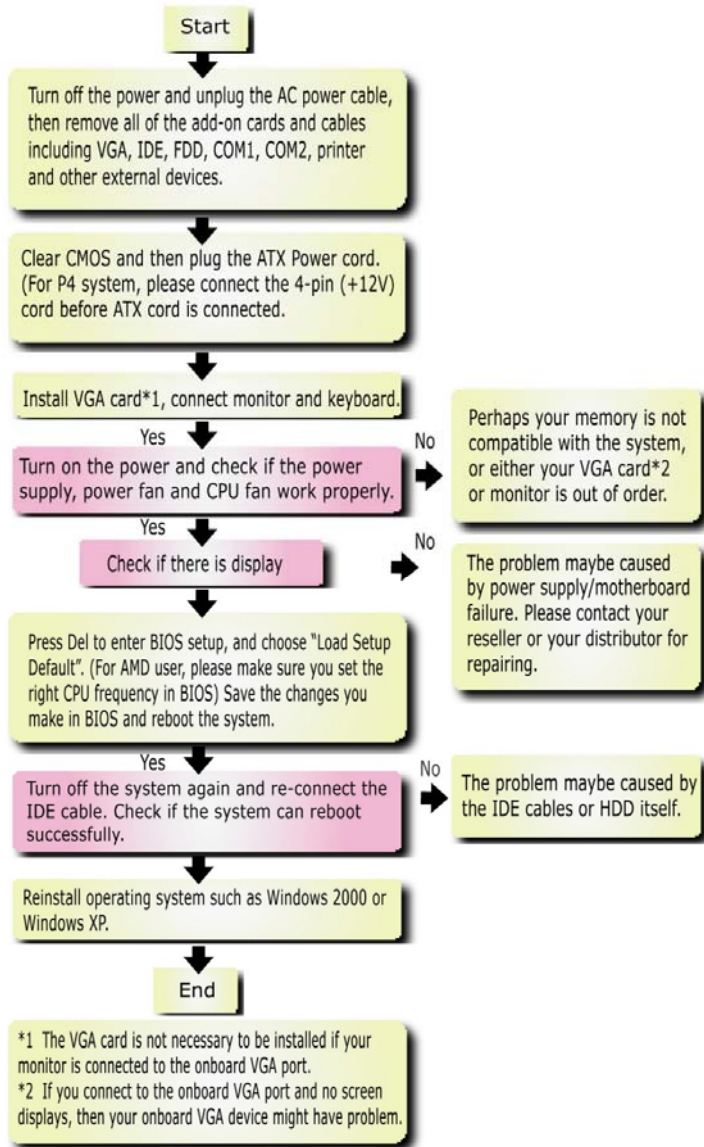
Install an infrared module onto the IrDA connector and enable the infrared function from BIOS Setup, UART Mode, you can use this function. Please make sure you connect correct orientation when plugging IrDA module.
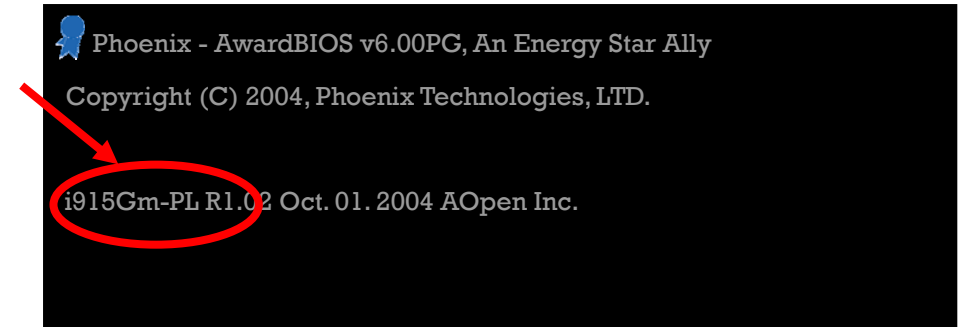
Pin 1

| | | 1 | |
|---|---|---|---|
| NC | ● | ○ | KEY |
| +5V | ● | ● | GND |
| IR_TX | ● | ● | IR_RX |

IrDA Connector
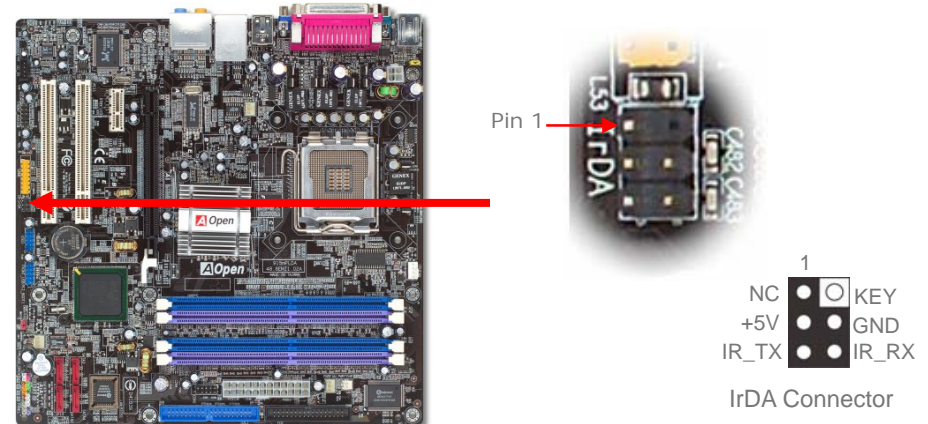
# Troubleshooting

If you encounter any trouble to boot you system, follow the procedures accordingly to resolve the problem.

**Start**

Turn off the power and unplug the AC power cable, then remove all of the add-on cards and cables including VGA, IDE, FDD, COM1, COM2, printer and other external devices.

Clear CMOS and then plug the ATX Power cord. (For P4 system, please connect the 4-pin (+12V) cord before ATX cord is connected.)

Install VGA card*1, connect monitor and keyboard.

**Yes** — Turn on the power and check if the power supply, power fan and CPU fan work properly.
→ **No** — Perhaps your memory is not compatible with the system, or either your VGA card*2 or monitor is out of order.

**Yes** — Check if there is display
→ **No** — The problem maybe caused by power supply/motherboard failure. Please contact your reseller or your distributor for repairing.

**Yes** — Press Del to enter BIOS setup, and choose "Load Setup Default". (For AMD user, please make sure you set the right CPU frequency in BIOS) Save the changes you make in BIOS and reboot the system.

**Yes** — Turn off the system again and re-connect the IDE cable. Check if the system can reboot successfully.
→ **No** — The problem maybe caused by the IDE cables or HDD itself.

Reinstall operating system such as Windows 2000 or Windows XP.

**End**

*1  The VGA card is not necessary to be installed if your monitor is connected to the onboard VGA port.
*2  If you connect to the onboard VGA port and no screen displays, then your onboard VGA device might have problem.

## Model name and BIOS version

Model name and BIOS version can be found on upper left corner of first boot screen (POST screen). For example:

> Phoenix - AwardBIOS v6.00PG, An Energy Star Ally
>
> Copyright (C) 2004, Phoenix Technologies, LTD.
>
> i915Gm-PL R1.02 Oct. 01. 2004 AOpen Inc.

i915Gm-PL is model name of motherboard; **R1.02** is BIOS version

## Register Your Motherboard

Thanks for choosing AOpen product, please register this motherboard at http://club.aopen.com.tw/productreg/ to become a Gold member of Club AOpen, and to ensure high service quality and priority from AOpen. You will also have a chance to play slot machine game to win prize from AOpen. Please prepare the following information before you start: **Model Name, Part Number (P/N), Serial Number (S/N) and Purchase Date**. The Part Number and Serial number are printed on bar code label. You can find this bar code label on the outside packing or on component side of PCB. For example:

**91881102019 1949378KN73**

Part No.          Serial No.

**P/N: 91.88110.201** is part number, **S/N: 91949378KN73** is serial number.

### Phoenix-Award BIOS ERROR Message

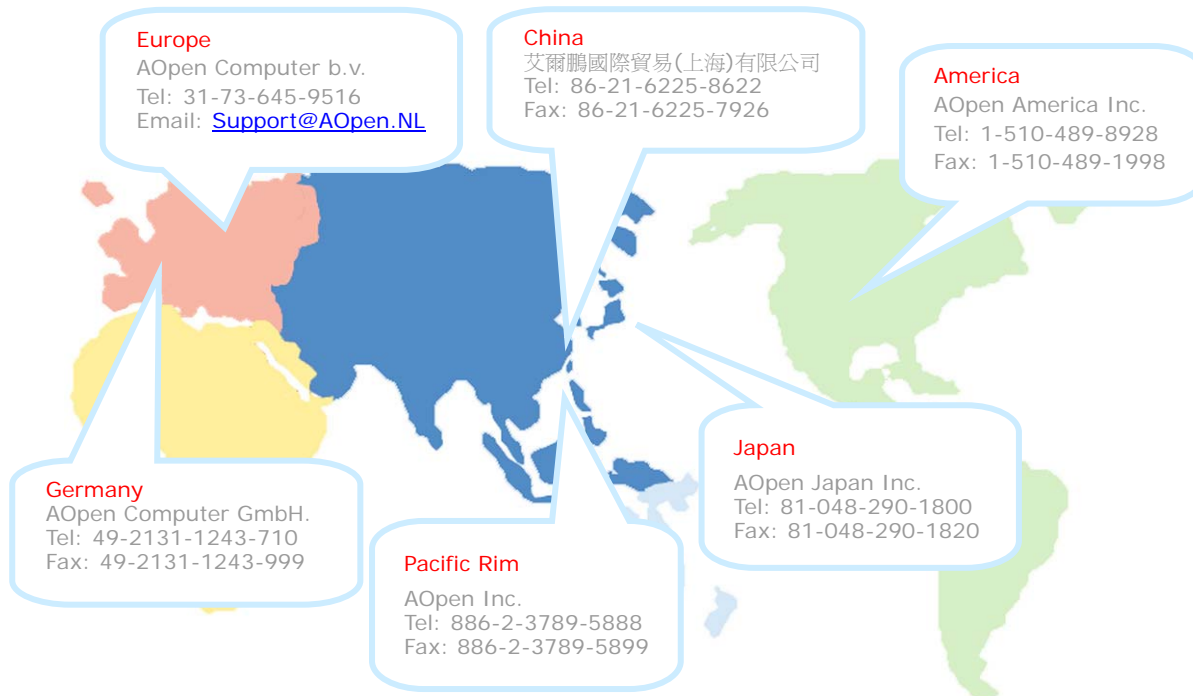| Beep Sound | Message |
| --- | --- |
| 1 short(Beep) | System booting is normally. |
| 1 long - 1 short(Beep) | DRAM ERROR |
| 1 long - 2 short(Beep) | Display card or monitor connected error |
| 1 long - 3 short(Beep) | Keyboard Error |
| Long(Beep) continuous | DRAM hasn't inset correctly. |

# Technical Support

Dear Customer,

Thanks for choosing AOpen products. We invite you to register at http://www.aopen.com to become a Gold Member of Club AOpen so as to ensure quality service in the future. In order to maintain the best service to every customer of us, we recommend you to follow the procedures below and seek help from our branches according to the region you buy the product. With your help, we can then continue to provide efficient and the best quality service to every customer.

Thanks very much for your understanding!

**Europe**
AOpen Computer b.v.
Tel: 31-73-645-9516
Email: Support@AOpen.NL

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艾爾鵬國際貿易(上海)有限公司
Tel: 86-21-6225-8622
Fax: 86-21-6225-7926

**America**
AOpen America Inc.
Tel: 1-510-489-8928
Fax: 1-510-489-1998

**Germany**
AOpen Computer GmbH.
Tel: 49-2131-1243-710
Fax: 49-2131-1243-999

**Pacific Rim**
AOpen Inc.
Tel: 886-2-3789-5888
Fax: 886-2-3789-5899

**Japan**
AOpen Japan Inc.
Tel: 81-048-290-1800
Fax: 81-048-290-1820

| | |
|---|---|
| Europe | Email: Support@AOpen.NL |
| Pacific Rim | http://www.aopen.com.tw/tech/default.htm |
| China | http://www.aopen.com.cn/tech/default.htm |
| Germany | http://www.aopencom.de/tech/default.htm |
| America | http://usa.aopen.com/tech/default.htm |
| Japan | http://aopen.jp/tech/index.html |

**Online Manual:** To download manual, please log on and then select your preferred language. Under "Type" directory, choose "Manuals" to go to our manual database. You can also find the manual and EIG in AOpen Bonus Pack.
http://download.aopen.com.tw/downloads

**Test Report:** We recommend you to choose board/card/device from the compatibility test reports for assembling your PC. It may prevent incompatibility problems.
http://english.aopen.com.tw/tech/report/default.htm

**FAQ:** Here we list problems that users often encounter and FAQ (Frequently Asked Questions). You may select your preferred language after log on, and may be able to find a solution to your problem.
http://club.aopen.com.tw/faq/

**Download Software:** After log on and having language selected, you may get the latest updated BIOS/utility and drivers you need under "Type" directory. In most case, newer versions of drivers and BIOS have solved earlier bugs or compatibility problems.
http://download.aopen.com.tw/downloads

**eForum:** AOpen eForum is provided to discuss our products with other users, in which your problem probably had been discussed before or will be answered. After log on, you may select your preferred language under "Multi-language".
http://club.aopen.com.tw/forum

**Contact Us:** Please prepare detail system configuration and error symptom before contacting us. The part number, serial number and BIOS version are also very helpful.

**Contact Distributors/Resellers:** We sell our products through resellers and integrators. They should know your system configuration very well and should be able to solve your problem efficiently and provide important reference for you.