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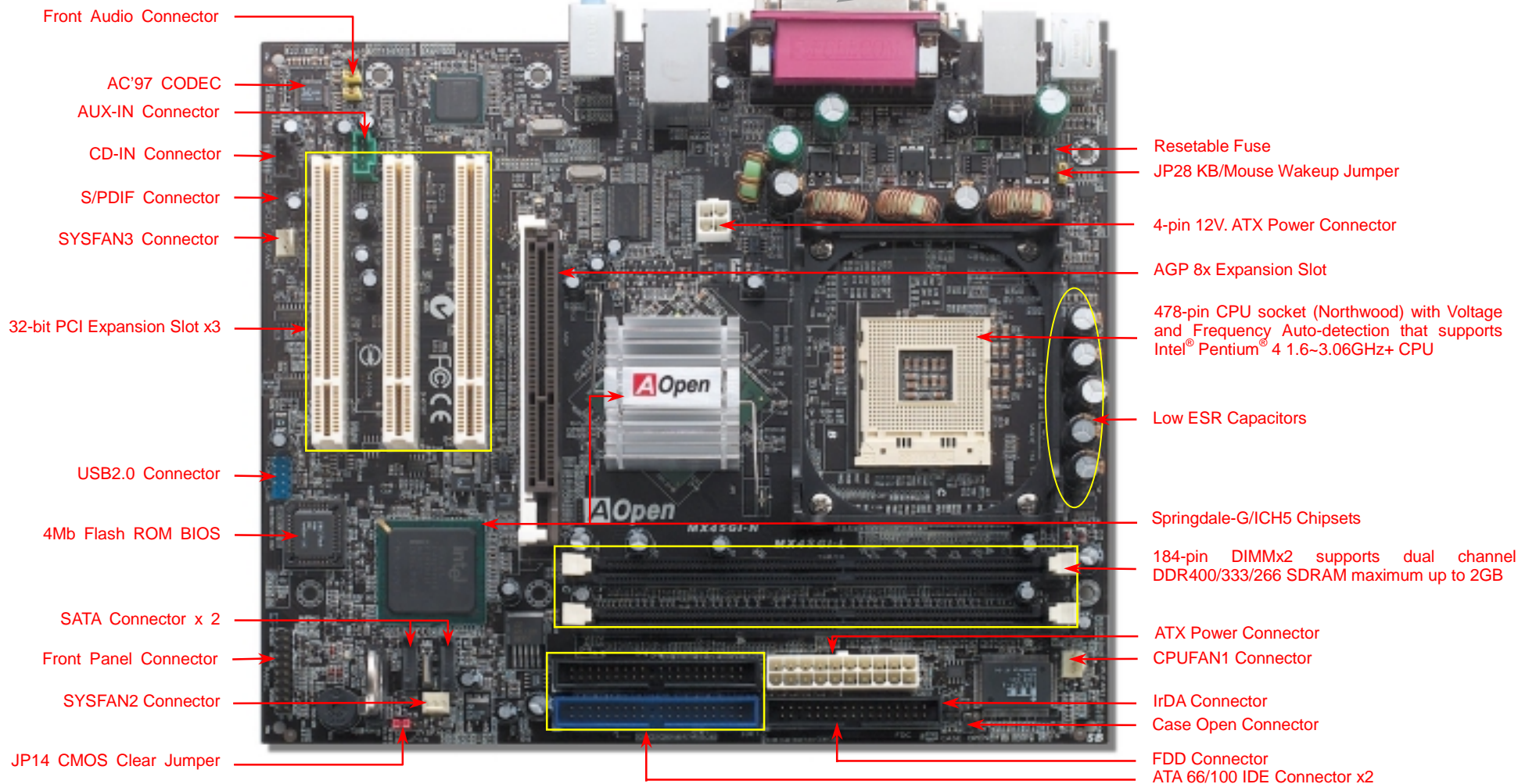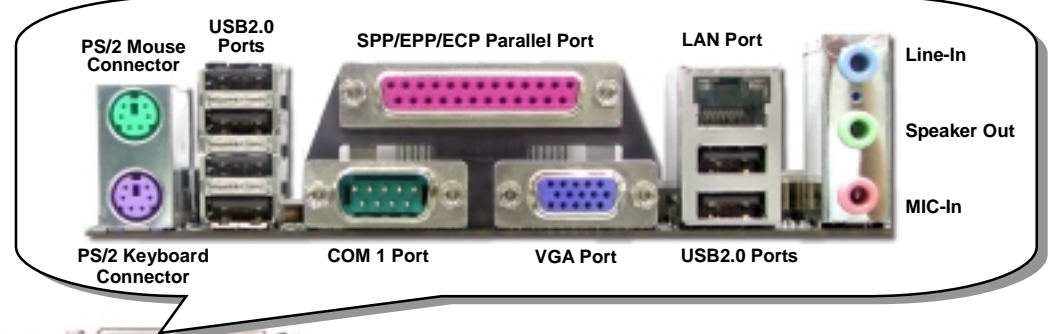
MX4SGI-L
MX4SGI-N

Easy Installation Guide

(AOpen reserves the right to revise all the specifications and information contained in this document which is subject to change without notice.)

PS/2 Mouse Connector
USB2.0 Ports
SPP/EPP/ECP Parallel Port
LAN Port
Line-In
Speaker Out
MIC-In
PS/2 Keyboard Connector
COM 1 Port
VGA Port
USB2.0 Ports

Front Audio Connector

AC'97 CODEC

AUX-IN Connector

CD-IN Connector

S/PDIF Connector

SYSFAN3 Connector

32-bit PCI Expansion Slot x3

USB2.0 Connector

4Mb Flash ROM BIOS

SATA Connector x 2

Front Panel Connector

SYSFAN2 Connector

JP14 CMOS Clear Jumper

Resetable Fuse

JP28 KB/Mouse Wakeup Jumper

4-pin 12V. ATX Power Connector

AGP 8x Expansion Slot

478-pin CPU socket (Northwood) with Voltage and Frequency Auto-detection that supports Intel® Pentium® 4 1.6~3.06GHz+ CPU

Low ESR Capacitors

Springdale-G/ICH5 Chipsets

184-pin DIMMx2 supports dual channel DDR400/333/266 SDRAM maximum up to 2GB

ATX Power Connector

CPUFAN1 Connector

IrDA Connector

Case Open Connector

FDD Connector

ATA 66/100 IDE Connector x2

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

☑ *This Easy Installation Guide x1*
☑ *80-wire IDE Cable x1*
☑ *Floppy Disk Drive Cable x1*
☑ *Registration Card x1*
☑ *Bonus Pack CD x1*

1. 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 PWR2.
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.
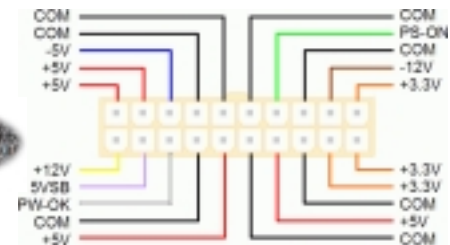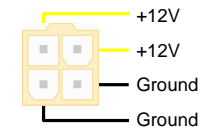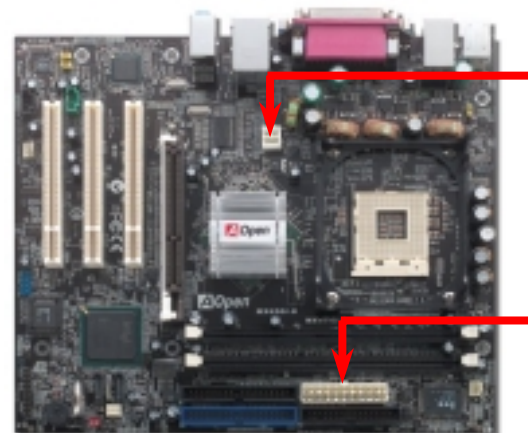5. Connect ATX power cable back to connector PWR2.

Pin 1

Normal (default)
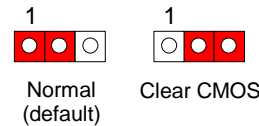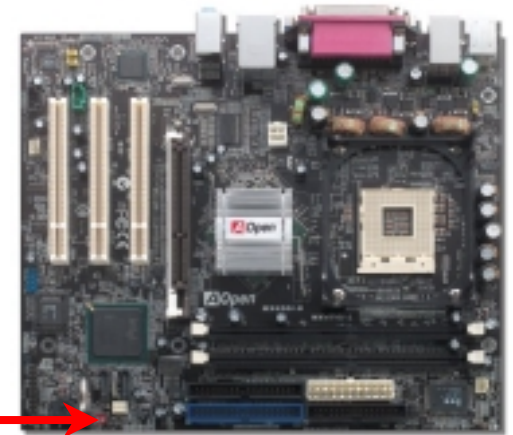
Clear CMOS

Tip: When should I Clear CMOS?
1. Boot fail because of overclocking…
2. Forget password…
3. Troubleshooting…

2. Connecting ATX Power Connector

This motherboard comes with a 20-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 20-pin connector.

+12V
+12V
Ground
Ground

COM
COM
-5V
+5V
+5V

+12V
5VSB
PW-OK
COM
+5V

COM
PS-ON
COM
-12V
+3.3V

+3.3V
+3.3V
COM
+5V
COM

3. Installing Processor

This socket supports Micro-FC-PGA2 package CPU, which is the latest CPU package developed by Intel. Other forms of CPU package are impossible to be fitted in.
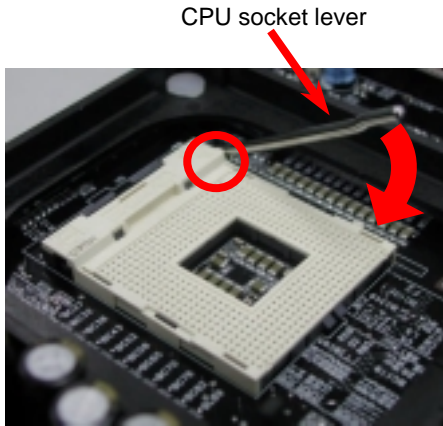
CPU socket lever

1. Pull up the CPU socket lever and up to 90-degree angle.

2. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper interface. Match Pin 1 and cut edge. Then insert the CPU into the socket.

3. Press down the CPU socket lever and finish CPU installation.

Note: If you do not match the CPU socket Pin 1 and CPU cut edge well, you may damage the CPU.

4. Installing CPU & System Fan

Plug in the CPU fan cable to the 3-pin **CPUFAN1** connector. If you have chassis fan, you can also plug it in **SYSFAN2** or **SYSFAN3** connector.

SYSFAN3 Connector

GND
+12V
SENSOR

CPUFAN1 Connector
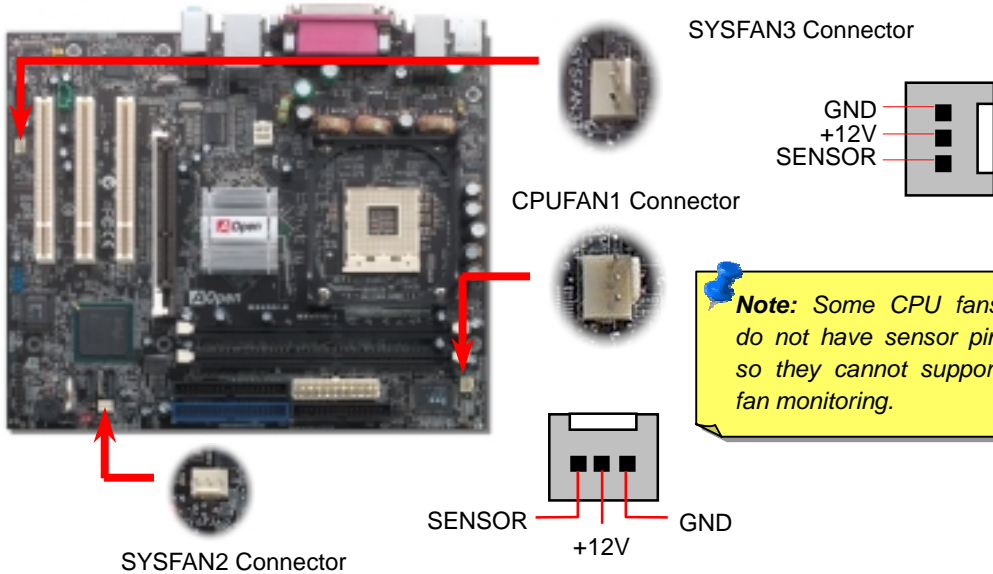
Note: Some CPU fans do not have sensor pin so they cannot support fan monitoring.

SENSOR
+12V
GND

SYSFAN2 Connector

5. Setting CPU Voltage & Frequency

Setting CPU Core Voltage

This motherboard supports CPU VID function. The CPU core voltage will be automatically detected.

Setting CPU Frequency

This motherboard is CPU jumper-less design, you can set CPU frequency through the BIOS setup, and no jumpers or switches are needed. The default setting is "table select mode". You can adjust the FSB from "CPU Host/SDRAM/PCI Clock" for overclocking.

BIOS Setup > Frequency / Voltage Control > CPU Speed Setup

CPU Ratio	8x, 10x… 21x, 22x, 23x, 24x
CPU FSB (By Manual)	100~248MHz by 1MHz stepping adjustment

Northwood CPU	CPU Core Frequency	FSB Clock	System Bus	Ratio
Pentium 4 1.6G	1600MHz	100MHz	400MHz	16x
Pentium 4 1.6G	1600MHz	133MHz	533MHz	12x
Pentium 4 1.7G	1700MHz	133MHz	533MHz	13x
Pentium 4 1.8G	1800MHz	100MHz	400MHz	18x
Pentium 4 2.0G	2000MHz	100MHz	400MHz	20x
Pentium 4 2.2G	2200MHz	100MHz	400MHz	22x
Pentium 4 2.2G	2200MHz	133MHz	533MHz	16x
Pentium 4 2.26G	2260MHz	133MHz	533MHz	17x
Pentium 4 2.4G	2400MHz	100MHz	400MHz	24x
Pentium 4 2.4G	2400MHz	133MHz	533MHz	18x
Pentium 4 2.53G	2530MHz	133MHz	533MHz	19x
Pentium 4 2.6G	2600MHz	200MHz	800MHz	13x
Pentium 4 2.66G	2660MHz	133MHz	533MHz	20x
Pentium 4 2.8G	2800MHz	133MHz	533MHz	21x
Pentium 4 2.8G	2800MHz	200MHz	800MHz	14x
Pentium 4 3.0G	3000MHz	200MHz	800MHz	15x
Pentium 4 3.06G	3060MHz	133MHz	533MHz	23x

Warning: Intel Springdale-G supports maximum 800MHz system bus and 66MHz AGP clock; higher clock setting may cause serious system damage.

6. Connecting Serial ATA Disk

To connect a Serial ATA disk, you have to have a 7-pin serial ATA cable. Connect two ends of the serial ATA cable to the serial ATA header on the mainboard and the disk. Like every other traditional disk, you also have to connect a power cable. Please note that it is a jumper free implement; you don't need to set jumpers to define a master or slave disk. When connecting two serial ATA disks, the system will automatically take the one connected to "Serial ATA 1" header as a master disk.

Note: *Please note that only under Windows XP and Windows.Net environment can you install the total of 2 Parallel ATA and 2 Serial ATA disks.*

Serial ATA header to connect Serial ATA disk
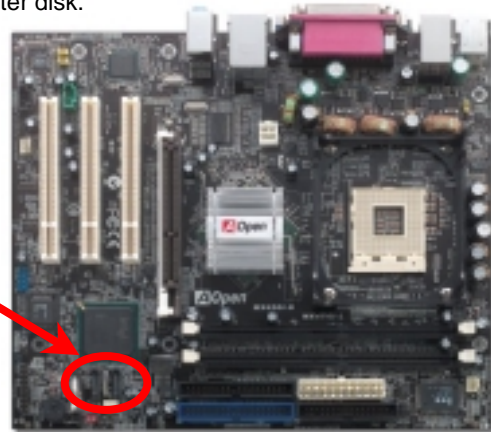
7. Installing Memory Modules

This motherboard has two 184-pin DDR DIMM sockets that allow you to install 128-bit dual channel DDR400, DDR333 or DDR266 memory up to 2GB. Only non-ECC DDR RAM is supported. Please install suitable modules; otherwise serious damage may occur on memory sockets or your RAM modules. To run dual channel speed, you have to use the same type memory modules installed on two DIMMs. If you install two different sized modules, the system can only run single channel mode and with the speed of that lower memory module. ***Please note that when you install DDR333 memory module and have your CPU FSB set at 800MHz, the memory can only run with the speed of DDR320. It is limitation of Intel.*** For other limitation of CPU types, please see the table below.

DIMM1
DIMM2
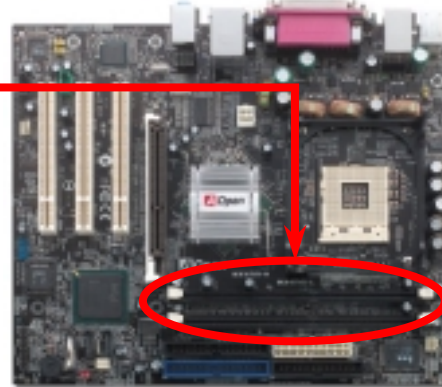
	DDR266	DDR333	DDR400
CPU FSB 400MHz	V	X	X
CPU FSB 533MHz	V	V	X
CPU FSB 800MHz	V	V	V

8. S/PDIF Connector

S/PDIF (Sony/Philips Digital Interface) is a latest audio transfer file format that provides impressive quality through optical fiber and allows you to enjoy digital audio instead of analog. Normally there are two S/PDIF outputs as shown, one for RCA connector, the most common one used for consumer audio products, and the other for optical connector with a even better audio quality. Through a specific audio cable, you can connect the S/PDIF connector to a S/PDIF audio module bearing S/PDIF digital output. However, you must have a S/PDIF supported speaker with S/PDIF digital input to make the most of this function.

Pin1

S/PDIF OUT
S/PDIF IN
S/PDIF OUT
S/PDIF IN
(Optical)
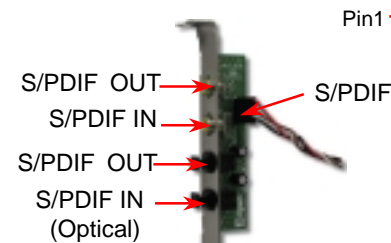
S/PDIF

S/PDIF Module

(User Upgrade Optional)

9. Front Panel Connector

1

SPWR

ACPI & PWR LED

IDE LED

ACPILED (Blue)
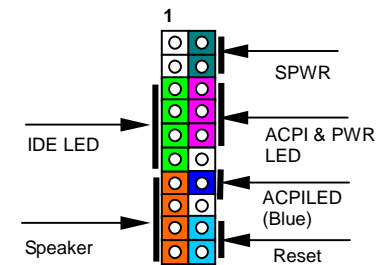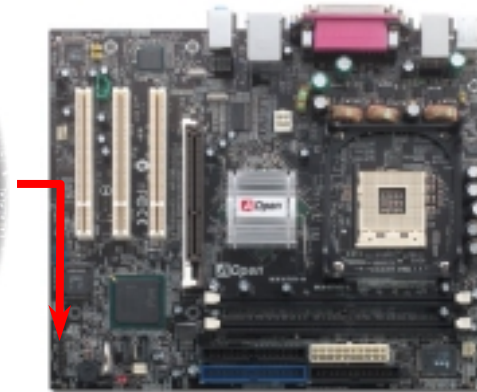
Speaker

Reset

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**.

1

NC	5VSB
NC	SPWR
+5V	ACPI LED-
IDE LED	GND
IDE LED	ACPILED
+5V	NC
+5V	ACPI_B
GND	GND
NC	RESET
SPEAKER	GND
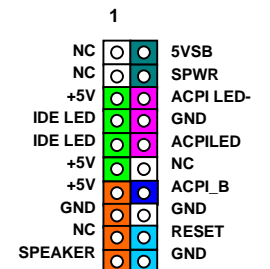
10. JP28 Keyboard/Mouse Wakeup Jumper

This motherboard provides PS2 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 set to "Disable"(1-2), and you may enable this function by setting the jumper to 2-3.

Pin 1

1
Disable
(Default)

1
Enable

11. IrDA Connector

The IrDA connector can be configured to support wireless infrared module. With this module and application software such as Laplink or Windows 95 Direct Cable Connection, users can transfer files to or from laptops, notebooks, PDA devices and printers. This connector supports HPSIR (115.2Kbps, 2 meters) and ASK-IR (56Kbps).

Install the infrared module onto **IrDA** connector and enable the infrared function from BIOS Setup, UART Mode. Please make sure you have the correct orientation when connecting IrDA connector.

1
NC   KEY
+5V   GND
IR_TX   IR_RX

IrDA Connector

Pin 1

12. Front Audio Connector

If the housing has been designed with an audio port on the front panel, you'll be able to connect onboard audio to front panel through this connector. By the way, please remove the jumper cap from the Front Audio Connector before you connect the cable. Do not remove this yellow jumper cap if your housing doesn't have an audio port on the front panel.

Pin 1

1   2
AUD_MIC   AUD_GND
AUD_MIC_BIAS   AUD_VCC
AUD_FPOUT_R   AUD_RET_R
NC   KEY
AUD_FROUT_L   AUD_RET_L
9   10

13. 2nd USB2.0 Connectors

This motherboard provides eight USB ports to connect USB devices such as mouse, keyboard, modem, printer, etc. There are one USB connector on the board for you to connect two USB devices and six other ports on the back panel. You can use proper cables to connect USB devices from back panel or connect the front USB connector to the front panel of chassis.

1
+5V   +5V
SBD2-   SBD3-
SBD2+   SBD3+
GND   GND
KEY   NC

Pin1
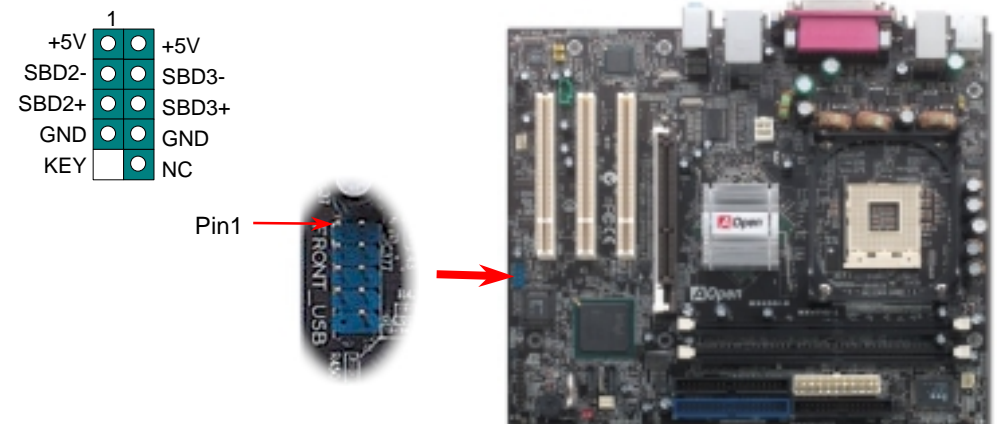
14. 10/100Mbps(MX4SGI-N) and Gigabits(MX4SGI-L) LAN Onboard

On the strength of Intel 10/100Mbps LAN PHY (MX4SGI-N) or Intel Kenai II Gigabits LAN controller (MX4SGI-L) on board, which is a highly integrated platform LAN connect device, it provides 10/100Mbps or gigabits Ethernet for office and home use. The Ethernet RJ45 connector is located on top of USB connectors. The right-hand side LED on RJ45 connector indicates linking mode; It blinks in orange whenever accessing to network. The left-hand side LED on RJ45 connector indicates connecting mode; it lights in green when 100Mbps LAN is connected (no light while 10Mbps is connected), and lights in green when gigabits LAN is connected. To enable or disable this function, you can simply adjust it in BIOS.

Left: Connecting

Green (100Mbps)

Orange (Gigabit)

Right: LINK (Orange)
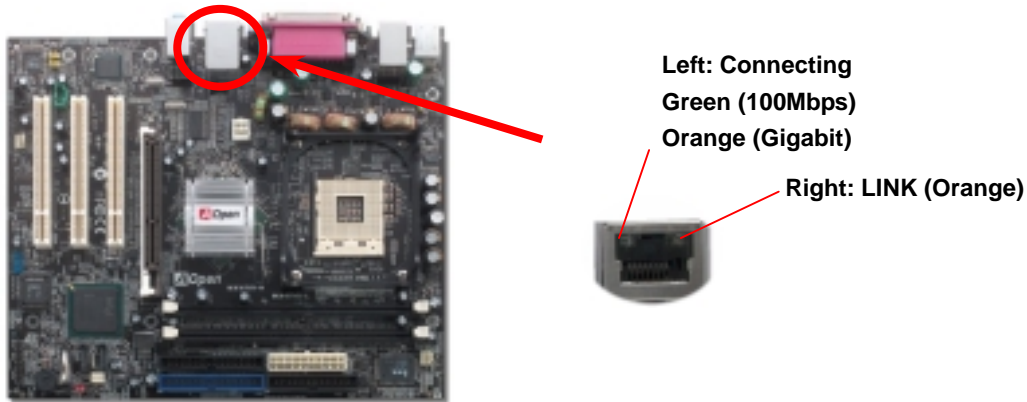
15. AOpen Bonus Pack CD

You can use the autorun menu of Bonus CD. Choose the utility and driver and select model name. After selecting the model name, you can install its INF, Audio, LAN and USB2.0 drivers from this CD.
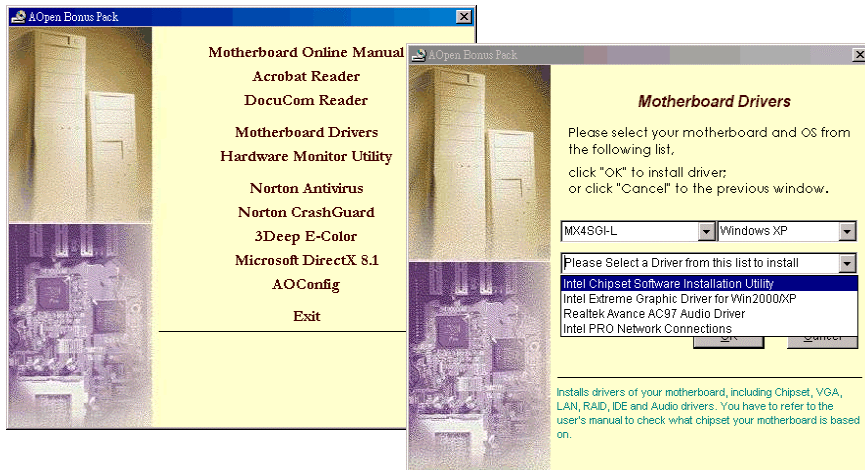
16. Power-on and Load BIOS Setup

After you finish jumper settings 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.


```
CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
► 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 Configura                                 faults
► PC Health Status    Load Setup Defaults (Y/N)? Y  faults
► Frequency/Voltage
Esc : Quit
F10 : Save & Exit Setup
                                   Load Setup De
```

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

NEW! 17. BIOS Upgrade

You may accomplish BIOS upgrade procedure with EzWinFlash by the following steps, and it's STRONGLY RECOMMENDED to close all the applications before you start the upgrading.

1. Download the new version of BIOS package zip file from our official web site. Unzip the download BIOS package (ex: WMX4SGIN102.ZIP) with WinZip (http://www.winzip.com) in Windows environment.

2. Save the unzipped files into a folder, for example, WMX4SGIN102.EXE & WMX4SGIN102.BIN.

3. Double click on WMX4SGIN102.EXE, EzWinFlash will detect the model name and BIOS version of your motherboard. If you had got the wrong BIOS, you will not be allowed to proceed with the flash steps.

4. You may select preferred language in the main menu, then click [Start Flash] to start the BIOS upgrade procedure.

5. EzWinFlash will complete all the process automatically, and a dialogue box will pop up to ask you to restart Windows. You may click [YES] to reboot Windows.

6. Press <Del> at POST to enter BIOS setup, choose "Load Setup Defaults", then "Save & Exit Setup". Done!

It is strongly recommended NOT to turn off the power or run any application during FLASH PROCESS.

Troubleshooting

If you encounter any trouble while booting your 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 addon cards and cables, including VGA, IDE, FDD, COM1,
COM2 and Printer.

Make sure if the jumper settings for CPU and DRAMs are correct.

Clear CMOS, then plug the ATX power cord correctly.
(For P4 system, please also plug the 4pin(+12V) cord.

Install the VGA card. Then connect your monitor and keyboard.

Turn on the power, and check if          No    The problem was probably caused
the power supply and CPU fan                    by power supply or motherboard
work properly.                                  failure. Please contact your reseller
                                                or local distributor for repairing.
        Yes

Check if there is display.                 No    Perhaps your VGA card or monitor
                                                 is defective.
        Yes

Press Ctrl, and Alt key at the             No    It is very possible that your keyboard
same time, hold them and then                    is defective.
press Del to see if the
system reboots.
        Yes

During system rebooting, press Del to enter BIOS Setup. Choose
"Load Setup Default".

Turn off the system and                    No    The problem should be caused by the
re-connect the IDE cable.                        IDE cables or HDD itself.
Check if the system can
reboot successfully.
        Yes

Re-install Windows 95, Windows 98 or Windows NT.

                    End
```

Part Number and Serial Number

The Part Number and Serial number are printed on bar code label. You can find the bar code label on the outside packing or on the component side of PCB. For example:

```
        |||||||||||||||||||||||||||||||
        P/N:91.88110.201    S/N:91949378KN73
             Part No.              Serial No.

        |||||||||||||||||||||||||||||||
        918811020191949378KN73
             Part No.            Serial No.
```
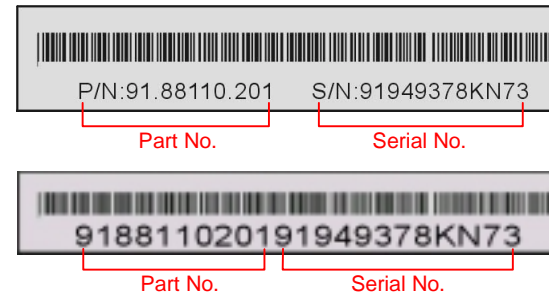
P/N: 91.88110.201 is part number, **S/N: 91949378KN73** is serial number.

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:

MX4SGI-N R1.02 Apr. 01. 2003 AOpen Inc.

Award Plug and Play BIOS Extension v1.0A

Copyright © 2003, Award Software, Inc.

MX4SGI-N is model name of motherboard; **R1.02** is BIOS version

Technical Support

Dear Customer,

Thanks for choosing AOpen products. To provide the best and fastest service to our customer is our first priority. However, we receive numerous emails and phone-calls worldwide everyday, it is very hard for us to serve everyone on time. We recommend you follow the procedures below and seek help before contact us. With your help, we can then continue to provide the best quality service to more customers.

Thanks very much for your understanding!

AOpen Technical Supporting Team

Pacific Rim AOpen Inc. Tel: 886-2-3789-5888 Fax: 886-2-3789-5899	**Europe** AOpen Computer b.v. Tel: 31-73-645-9516 Fax: 31-73-645-9604
China 艾爾鵬國際貿易(上海)有限公司 Tel: 86-21-6225-8622 Fax: 86-21-6225-7926	**Germany** AOpen Computer GmbH. Tel: 49-1805-559191 Fax: 49-2102-157799
America AOpen America Inc. Tel: 1-510-489-8928 Fax: 1-510-489-1998	**Japan** AOpen Japan Inc. Tel: 81-048-290-1800 Fax: 81-048-290-1820

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German	*http://www.aopencom.de/tech/default.htm*
Simplified Chinese	*http://www.aopen.com.cn/tech/default.htm*

1 **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://club.aopen.com.tw/downloads

2 **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

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

4 **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://club.aopen.com.tw/downloads

5 **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/

6 **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.

7 **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.