AOpen
Solutions·Components

Easy Installation Guide

MX4SGI-4DL
MX4SGI-4DN

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

AGP LED

Front Audio Connector

AC'97 CODEC

CD-IN Connector

S/PDIF Connector

AUX-IN Connector

32-bit PCI Expansion Slot x3

SYSFAN3 Connector

2nd & 3rd USB2.0 Connector

STBY LED

Front Panel Connector

SATA Connector x 2

Chassis Intrusion Connector

4Mb Flash ROM BIOS

JP14 CMOS Clear Jumper

Resetable Fuse

JP28 KB/Mouse Wakeup Jumper

Low ESR Capacitors

4-pin 12V. ATX Power Connector

AGP 8x Expansion Slot
(For 1.5V AGP card and ADD card only)

478-pin CPU socket (Northwood) with Voltage and Frequency Auto-detection that supports Intel® Pentium® 4 1.6~3.20GHz+ CPU

865G/ICH5 Chipsets

SYSFAN2 Connector

CPUFAN1 Connector

184-pin DIMMx4 supports dual channel DDR400/333/266 DDR RAM maximum up to 4GB

COM2 Connector

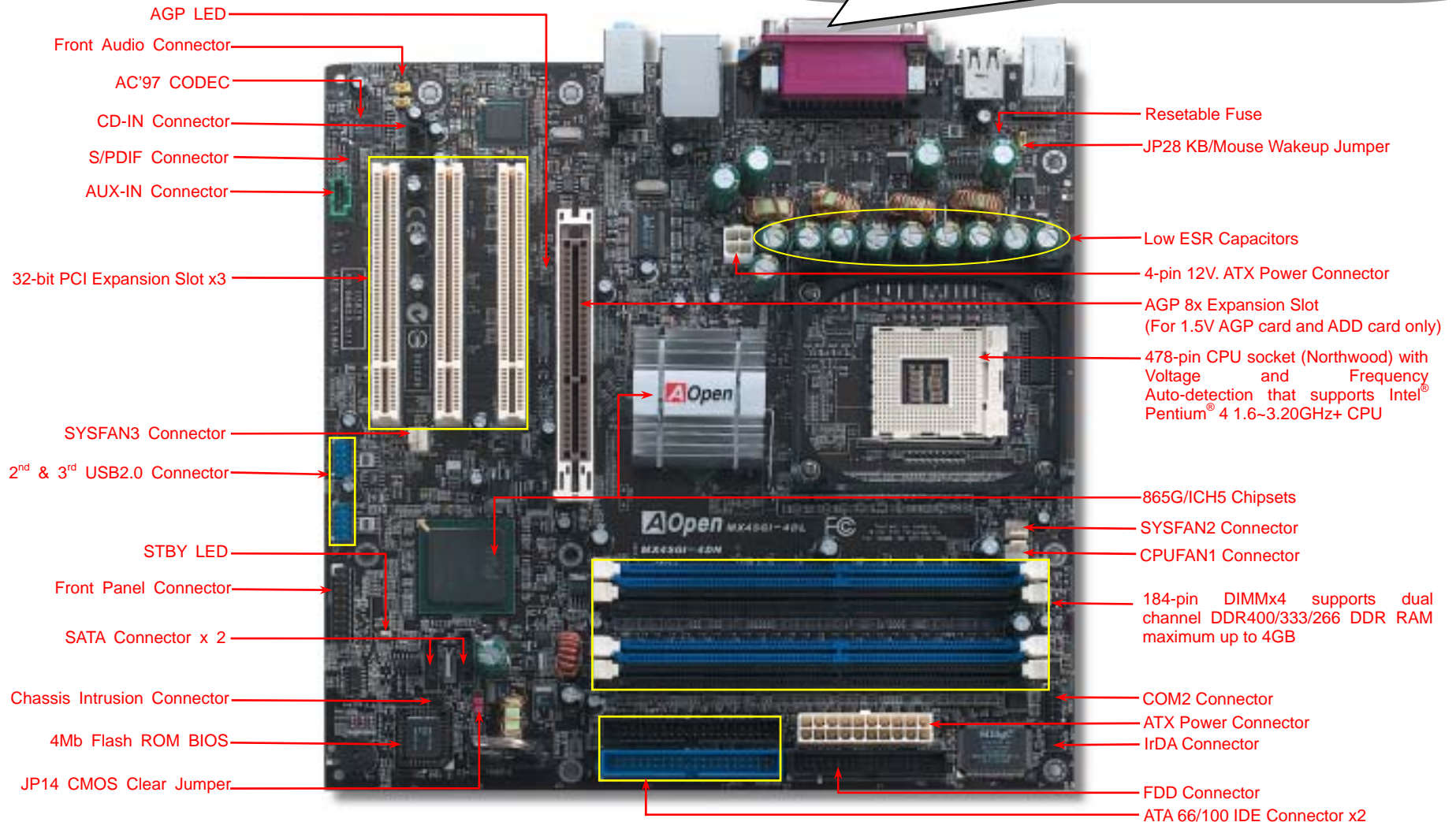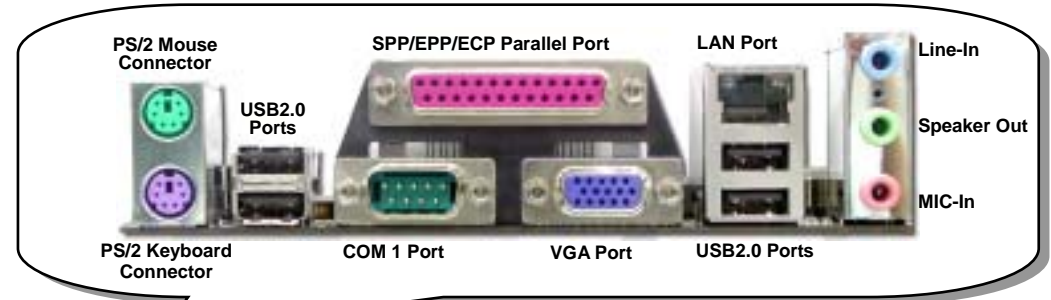ATX Power Connector

IrDA Connector

FDD Connector

ATA 66/100 IDE Connector x2

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

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**
☑ **Serial ATA Cable x1**
☑ **Registration Card x1**
☑ **Bonus Pack CD x1**

PART NO: 49.8B803.001   DOC. NO: MX4SGI4DN-EG-E0305A

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

1 Normal (default)
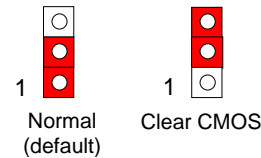
1 Clear CMOS

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

2. JP28 Keyboard/Mouse Wake-up Enable/Disable 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 installed. The factory default setting is set to "Disable"(1-2), and you may enable this function by setting the jumper to 2-3.
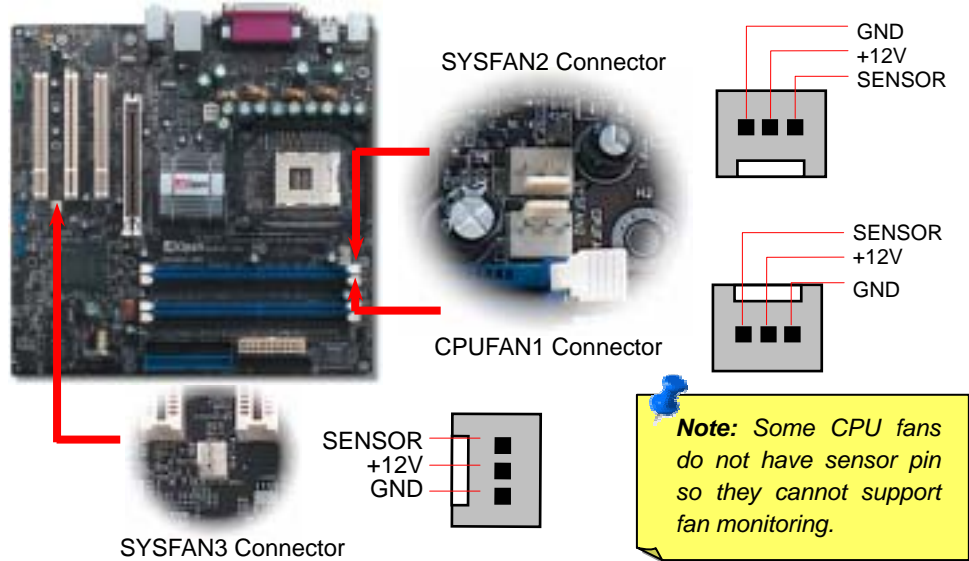
Pin 1

JP28
KB/Mouse Wake-up

Pin 1 Disable (Default)
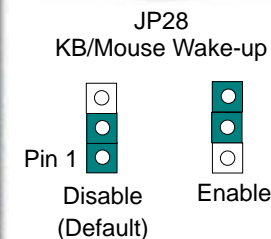
Enable

Note: To ensure JP28 wakeup function works properly, please go to BIOS to enable/disable the S3 S4 KB_Mouse Wake Up item same as the setting onboard. Otherwise, the JP28 wakeup function will not act accordingly when suspend mode is activated.

3. 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.

SYSFAN2 Connector

GND
+12V
SENSOR

SENSOR
+12V
GND

CPUFAN1 Connector

SENSOR
+12V
GND

SYSFAN3 Connector

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

4. Installing Memory Modules

This motherboard has four 184-pin DDR DIMM sockets that allow you to install 128-bit dual channel DDR400, DDR333 or DDR266 memory up to 4GB. 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 the same side. If you install two different sized modules, the system can only run single channel mode and with the speed of that lower memory module. For other limitation of CPU types, please see the table below.

DIMMA1
DIMMA2
DIMMB1
DIMMB2
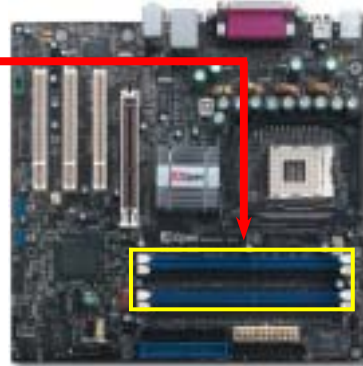
	DDR266	DDR333	DDR400
CPU FSB 400MHz	V	X	X
CPU FSB 533MHz	V	V	X
CPU FSB 800MHz	V	V	V

Note: 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.

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 (Manually)	100~248MHz by 1MHz stepping adjustment

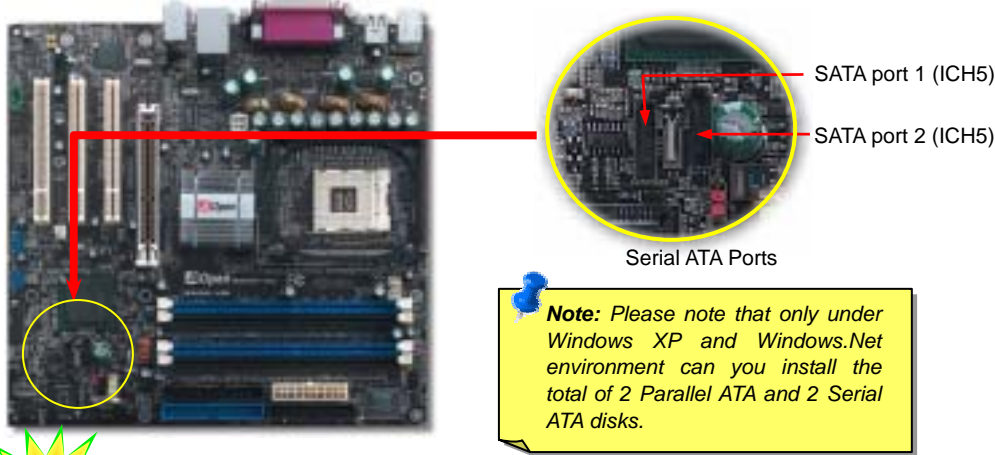| Northwood CPU	CPU Core Frequency	FSB Clock	System Bus	Ratio
Pentium 4 1.6G	1600MHz	100MHz	400MHz	16x
Pentium 4 1.6G	1600MHz	133MHz	533MHz	12x
Pentium 4 1.7G	1700MHz	133MHz	533MHz	13x
Pentium 4 1.8G	1800MHz	100MHz	400MHz	18x
Pentium 4 2.0G	2000MHz	100MHz	400MHz	20x
Pentium 4 2.2G	2200MHz	100MHz	400MHz	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
Pentium 4 3.20G	3192MHz	133MHz	533MHz	24x

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

Warning: Intel 865G supports maximum 800MHz system bus and 66MHz AGP clock; higher clock setting may cause serious system damage.

6. Serial ATA Supported

The Serial ATA specification is designed to overcome speed limitations while enabling the storage interface to scale with the growing media rate demands of PC platforms. This motherboard comes with integrated Serial ATA controller in chip, aiming to provide you an even faster transfer rate of 150 Mbytes/second and 300M/bs, 600M/bs to come.

SATA port 1 (ICH5)

SATA port 2 (ICH5)

Serial ATA Ports

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.

7. 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 motherboard and the disk. Like every other traditional disk, you also have to connect a power cable. Please be noted 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.

Serial ATA cable

8. 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.

Secondary Slave (4th)

Secondary Master (3rd)

IDE 2 (Secondary)

IDE 1 (Primary)

Pin 1

Primary Slave (2nd)

Primary Master (1st)

ATA 33/66/100 IDE Connector

Pin 1   FDD Connector

9. Front Panel Connector

1

SPWR

IDE LED

ACPI & PWR LED

ACPILED (Blue)
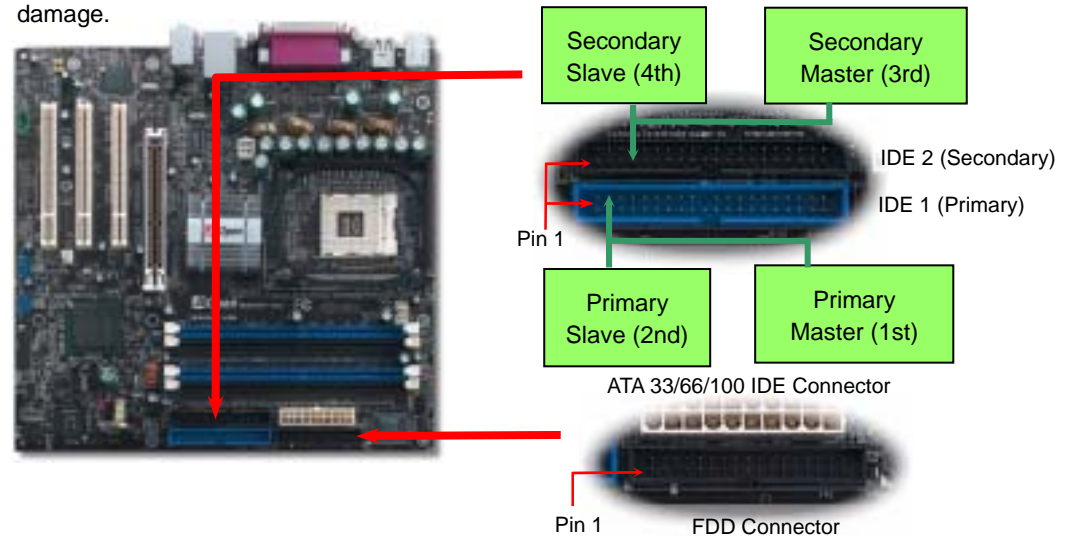
Speaker

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

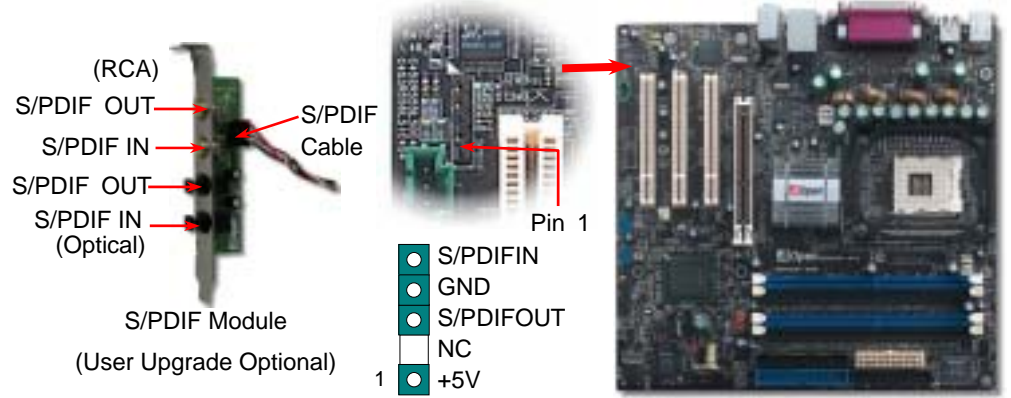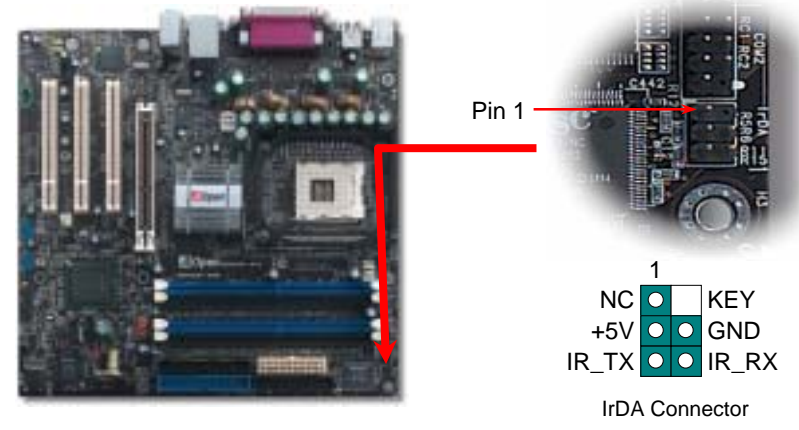## S/PDIF (Sony/Philips Digital Interface) Connector

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.

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

S/PDIF Cable

S/PDIF Module

(User Upgrade Optional)

Pin 1

S/PDIFIN
GND
S/PDIFOUT
NC
+5V
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

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.

Pin 1

1	
NC	KEY
+5V	GND
IR_TX	IR_RX

IrDA Connector

13. Support 2nd & 3rd USB2.0 Connectors

13. Support 2nd & 3rd USB2.0 Connectors

This motherboard provides eight USB ports to connect USB devices such as mouse, keyboard, modem, printer, etc. There are two USB connectors on the board for you to connect four USB devices and four 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.

Pin1

1	
+5V	+5V
SBD2-	SBD3-
SBD2+	SBD3+
GND	GND
KEY	NC
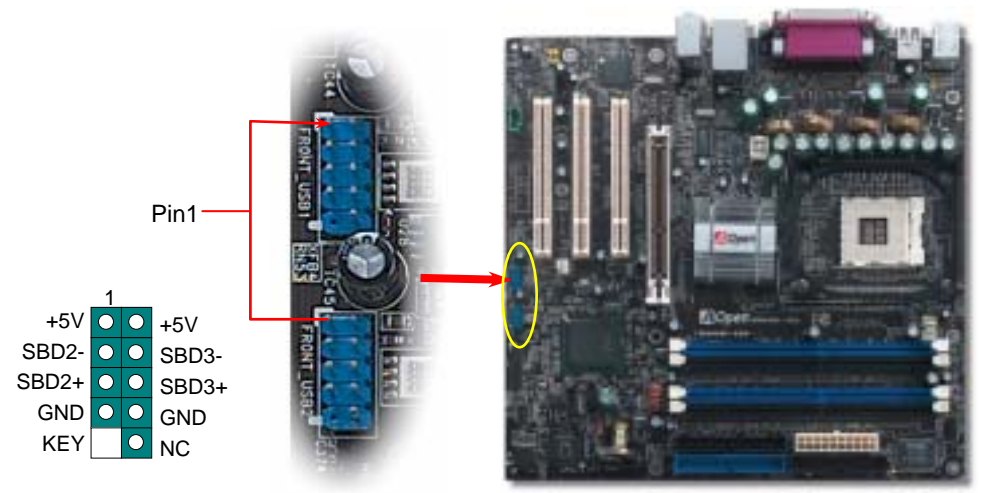
14. 10/100Mbps(MX4SGI-4DN) and Gigabits(MX4SGI-4DL) LAN Onboard

On the strength of Intel 10/100Mbps LAN PHY (MX4SGI-4DN) or Intel Kenai II Gigabits LAN controller (MX4SGI-4DL) 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 orange when gigabits LAN is connected. To enable or disable this function, you can simply adjust it in BIOS.

Connecting (Left)
Green (100Mbps)
Orange (Gigabit)

Linking (Right)
Orange
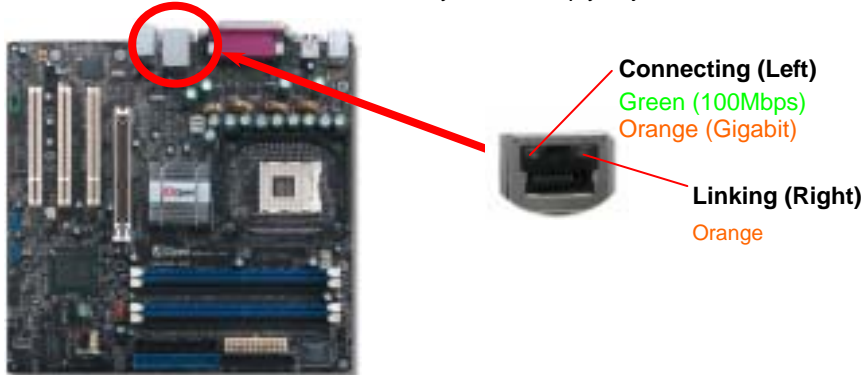
15. Power-on and Load BIOS Setup

Del

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.

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.

16. 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.

17. BIOS Upgrade under Windows Environment

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.
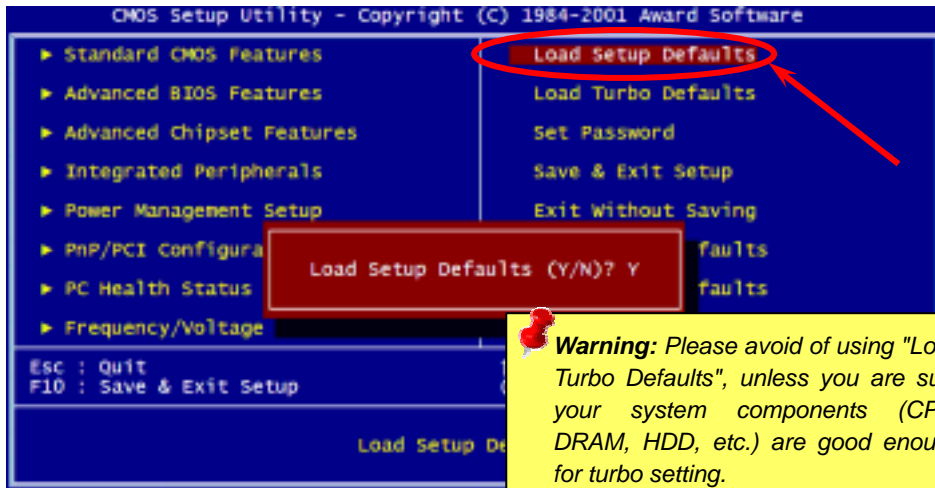
1. Download the new version of BIOS package zip file from our official web site. Unzip the download BIOS package (ex: WMX4SGI4DN102.ZIP) with WinZip (http://www.winzip.com) in Windows environment.
2. Save the unzipped files into a folder, for example, WMX4SGIN102.EXE & WMX4SGI4DN102.BIN.
3. Double click on WMX4SGI4DN102.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!
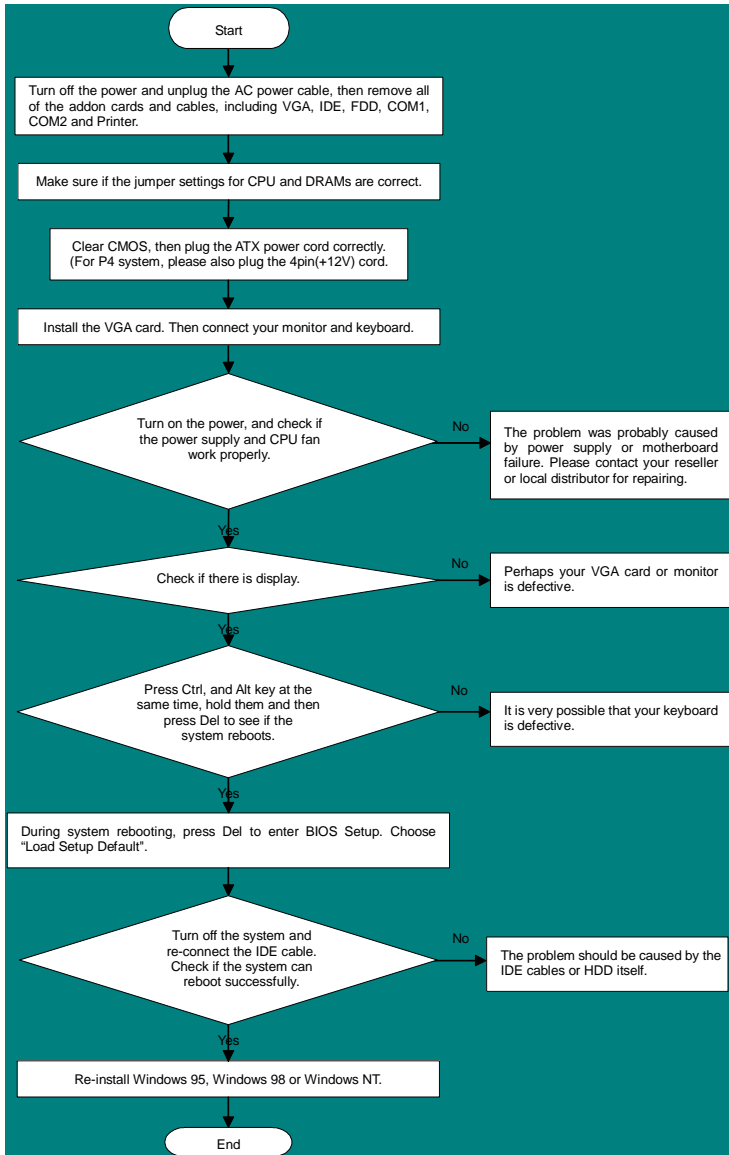
It is strongly recommended NOT to turn off the power or run any application during FLASH PROCESS.

Warning: The upgrade of new BIOS will permanently replace your original BIOS content after flashing. The original BIOS setting and Wi2000/WinXP PnP information will be refreshed and you probably need to re-configure your system.

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 the power supply and CPU fan work properly.
— No → The problem was probably caused by power supply or motherboard 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 same time, hold them and then press Del to see if the system reboots.
— No → It is very possible that your keyboard is defective.
— Yes ↓

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

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

9188110201 91949378KN73
Part No.   Serial No.
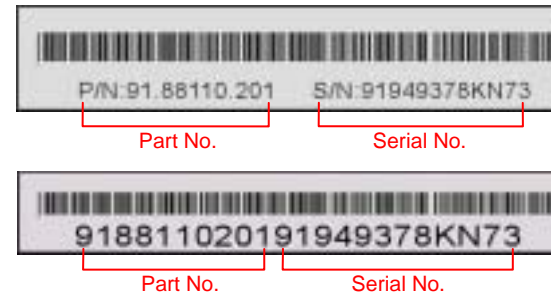
P/N: 91.88110.201 is part number, **S/N: 91949378KN73** is serial number.

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-4DN **R1.00** June. 01. 2003 AOpen Inc.

Award Plug and Play BIOS Extension v1.0A

Copyright © 2003, Award Software, Inc.

MX4SGI-4DN is model name of motherboard; **R1.00** 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

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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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Japanese	*http://www.aopen.co.jp/tech/default.htm*
Chinese	*http://www.aopen.com.tw/tech/default.htm*
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:/download.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:/download.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.