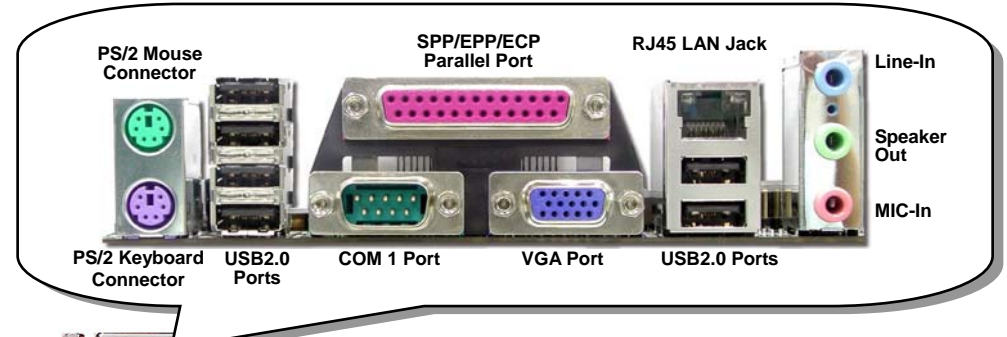# AOpen
Solutions·Components

AOpen reserves the right to revise all the specifications and information contained in this documentation, which are subject to change without notice.

MK77M-8XN
MK77M-8XL
MK77M-1394

Easy Installation Guide

PS/2 Mouse Connector

SPP/EPP/ECP Parallel Port

RJ45 LAN Jack

Line-In

Speaker Out

MIC-In

PS/2 Keyboard Connector

USB2.0 Ports

COM 1 Port

VGA Port

USB2.0 Ports

AUX-IN Connector

S/PDIF Connector

Front Audio Connector

CD-IN Connector

CNR Expansion Slot

32-bit PCI Expansion Slot x3

AGP 8X Expansion Slot

USB2.0 Connector

IEEE 1394 Connector x2 (for MK77M-1394)

JP14 CMOS Data Clear Jumper

Case Open Connector

Front Panel Connector
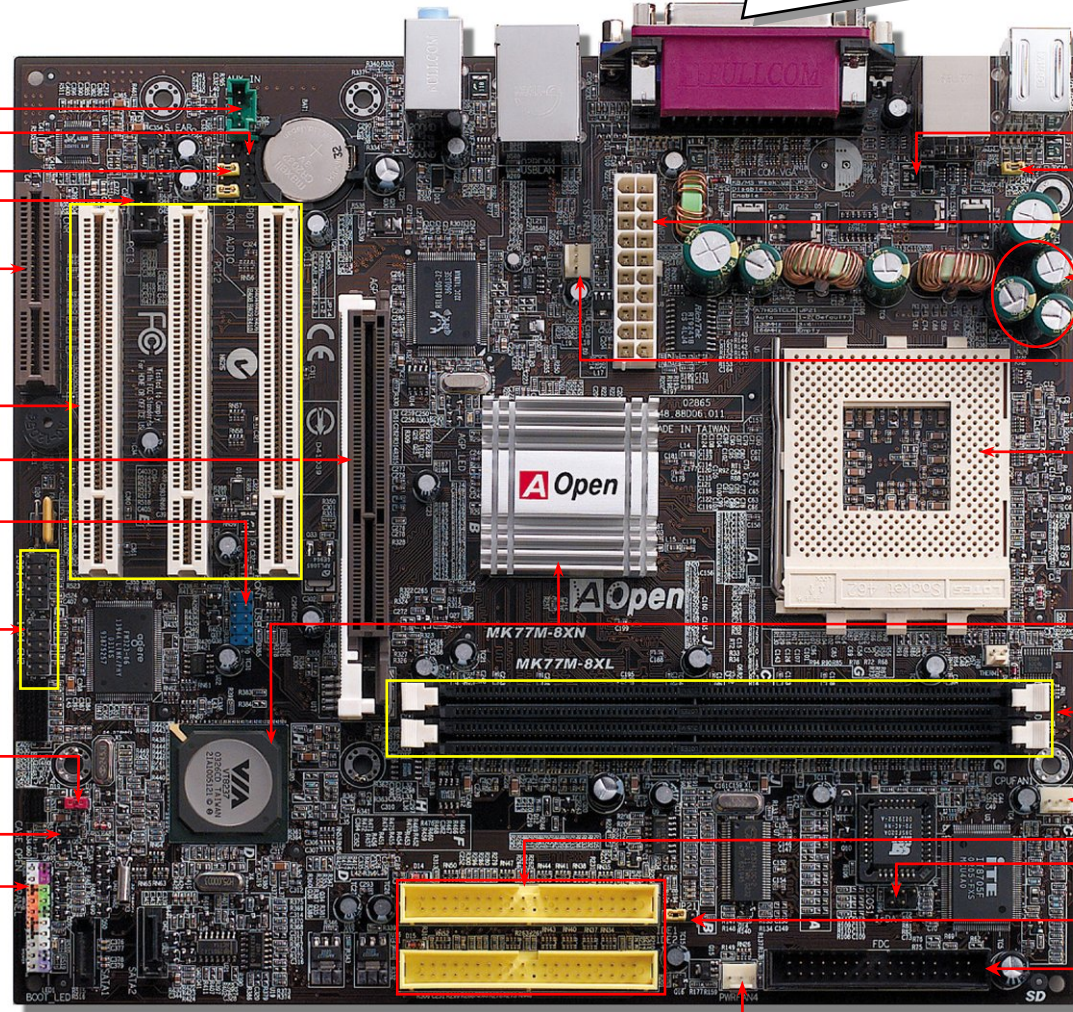
Resetable Fuse

JP28 Keyboard/Mouse Wakeup Jumper

ATX Power Connector

2200 μ F Low ESR Capacitors

SYSFAN3 Connector

462-pin CPU Socket with Voltage and Frequency Auto-Detection that supports AMD™Athlon™ / and Athlon™XP (with CPU Overheat Protection circuit to Athlon™XP CPU only)

VIA® KM400 and VT8237 Chipsets

184-pin DIMMx2 supports DDR333/266 max. to 2GB

CPUFAN1 Connector

IDE Connector x2 (ATA/66/100/133 supported)

IrDA Connector

JP21 K7 Host Clock Select Jumper

FDD Connector

SYSFAN2 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

- ☑ **This Easy Installation Guide x 1**
- ☑ **80-Wire IDE Cable x 1**
- ☑ **Floppy Drive Cable x 1**
- ☑ **IEEE 1394 Cable x 1**
- ☑ **Serial ATA Cable x 1**
- ☑ **IO Shield x 1**
- ☑ **Bonus Pack CD x 1**
- ☑ **Registration Card x 1**

PART NO: 49.88D06.001   DOC. NO: MK77M8XN-EG-E0308A

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

Clear CMOS

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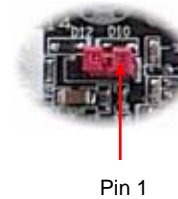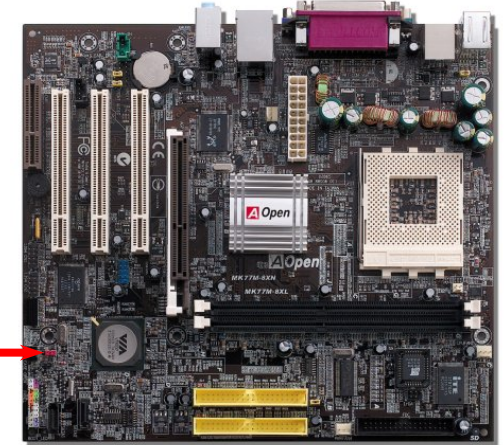
Tip: *When should I Clear CMOS?*

1. Boot fail because of overclocking…

2. Forget password…

3. Troubleshooting…

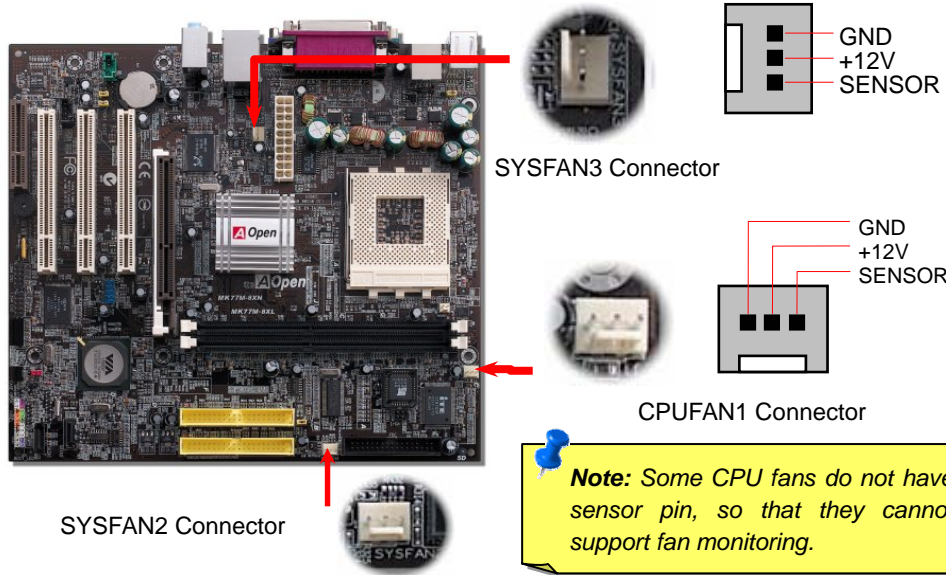## 2. Connecting ATX Power Connector

The ATX power supply uses 20-pin connector shown below. Make sure you plug in the right direction.

+12V	+5V
5VSB	+5V
PW-OK	-5V
COM	COM
+5V	COM
COM	COM
+5V	PS-ON
COM	COM
+3.3V	-12V
+3.3V	+3.3V
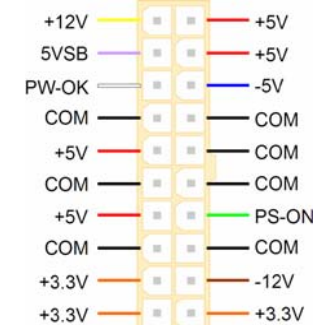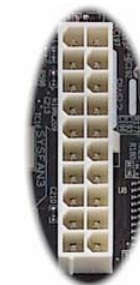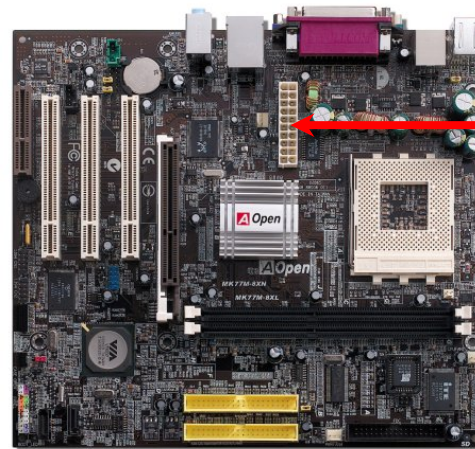
3. Installing CPU & Housing Fan

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

GND
+12V
SENSOR

SYSFAN3 Connector

GND
+12V
SENSOR

CPUFAN1 Connector

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

SYSFAN2 Connector

4. JP21 K7 Host Clock Selection

This jumper is used to specify the relationship of PCI and FSB clock. Generally speaking, if you are not an over-clocker, we recommend you to set it to the default setting. Additionally, this motherboard also provides "1MHz Stepping CPU Adjustment" feature for overclockers to adjust CPU FSB frequency via BIOS setup program. Based on the CPU type, the adjustment has two levels, Auto and 133MHz, for your choosing. If you fix the CPU FSB frequency by JP21, the "1MHz Stepping CPU Adjustment" range will be changed and follow the JP21 setting.

Pin 1

JP21 K7 Host Clock
Select Jumper

1
Auto
(Default)

1
133MHz

5. Setting CPU Voltage & Frequency

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.

BIOS Setup > Frequency / Voltage Control > CPU Speed Setup

*Core Frequency = CPU FSB Clock * CPU Ratio*

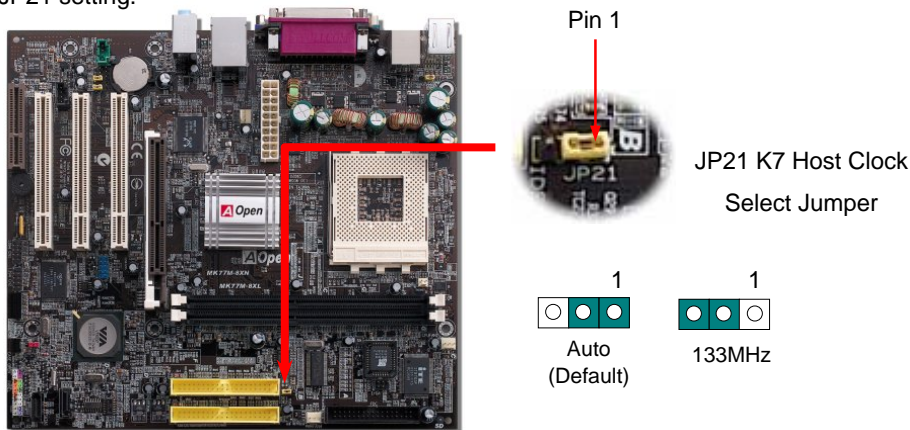| CPU Ratio	From 5.5x to 16.5x step 0.5x; 17x to 18x step 1x
CPU FSB (By manual Adjustment)	FSB=133, 130~165 by 1MHz stepping adjustment technology FSB=166, 161~199 by 1MHz stepping adjustment technology

CPU	CPU Core Frequency	EV6 Bus Clock	Ratio
Athlon 1G	1GHz	266MHz	7.5x
Athlon 1.13G	1.13GHz	266MHz	8.5x
Athlon 1.2G	1.2GHz	266MHz	9.0x
Athlon 1.33G	1.33GHz	266MHz	10.0x
Athlon 1.4G	1.4GHz	266MHz	10.5x
AthlonXP 1500+	1.3GHz	266MHz	10.0x
AthlonXP 1600+	1.4GHz	266MHz	10.5x
AthlonXP 1700+	1.46GHz	266MHz	11.0x
AthlonXP 1800+	1.53GHz	266MHz	11.5x
AthlonXP 1900+	1.6GHz	266MHz	12.0x
AthlonXP 2000+	1.667GHz	266MHz	12.5x
AthlonXP 2100+	1.73GHz	266MHz	13x
AthlonXP 2200+	1.80GHz	266MHz	12.5x
AthlonXP 2400+	2.0GHz	266MHz	13.5x
AthlonXP 2600+	2.13GHz	266MHz	15x
AthlonXP 2500+	1.83GHz	333MHz	11x
AthlonXP 2700+	2.16GHz	333MHz	13x
AthlonXP 2800+	2.083GHz	333MHz	13.5x
AthlonXP 3000+	2.167GHz	333MHz	13x

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: VIA® KM400 chipset supports 166MHz FSB (with performance reaches maximum 333MHz EV6 system bus) and 66MHz AGP clock, higher clock setting may cause serious system damage.

Warning: If you have adjusted CPU ratio on your current CPU and plan to replace a new CPU, please use <Home> key or Clear CMOS to restore the default setting. The system will implement the previous CPU setting on the new one.

Tip: If your system hangs or fails to boot when overclocking, please use <Home> key to restore the default setting or wait AOpen "Watch Dog ABS" for resetting the system in few seconds and the system will auto-detect hardware again.
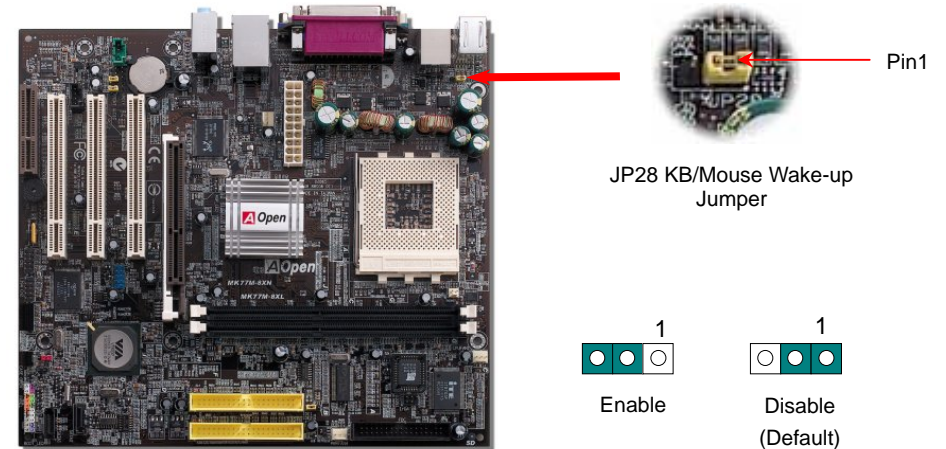
6. Connecting IDE and Floppy

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

Primary Master (1st)   Primary Slave (2nd)

IDE1 (Primary)
IDE2 (Secondary)

Pin 1

Secondary Master (3rd)   Secondary Slave (4th)

FDD Connector

Pin 1

ATA 66/100/133 IDE Connector

7. Connecting Front Panel Cable

1	
	Power Switch
IDE LED	ACPI & Power LED
SPEAKER	
	RESET
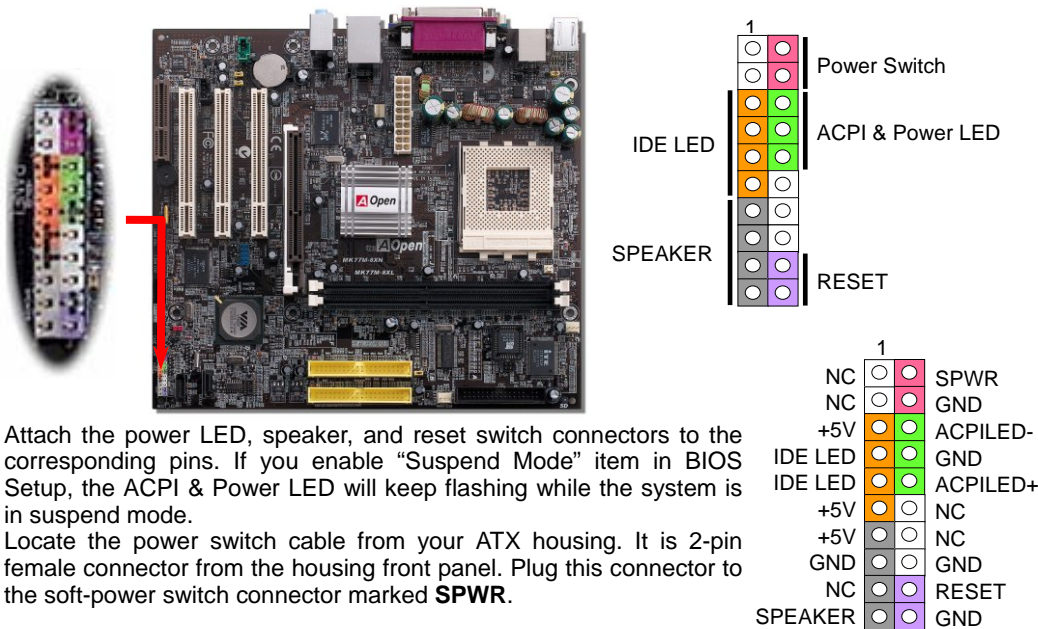
Attach the power LED, speaker, and reset switch connectors to the corresponding pins. If you enable "Suspend Mode" item in BIOS Setup, the ACPI & Power LED will keep flashing while the system is in suspend mode.

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		SPWR
NC		GND
+5V		ACPILED-
IDE LED		GND
IDE LED		ACPILED+
+5V		NC
+5V		NC
GND		GND
NC		RESET
SPEAKER		GND

8. JP28 KB/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 installed. The factory default setting is set to "Disable"(1-2), and you may enable this function by setting the jumper to pin2-3.

Pin1

JP28 KB/Mouse Wake-up Jumper

1	1
Enable	Disable (Default)

9. Connecting Front Audio

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 5-6 and 9-10 jumper caps from the Front Audio Connector before connecting the cable. Please do not remove these 5-6 and 9-10 yellow jumper caps if there's no audio port on the front panel.

Pin 1

1	
AUD_MIC	AUD_GND
AUD_MIC_BIAS	AUD_VCC
AUD_FPOUT_R	AUD_RET_R
NC	KEY
AUD_FPOUT_L	AUD_RET_L
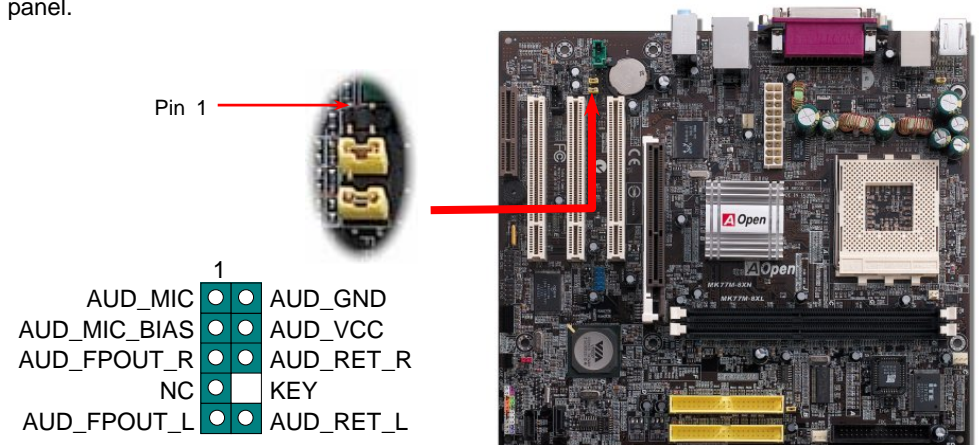
10. Support Eight USB 2.0 Ports

This motherboard provides eight USB ports to connect USB devices such as mouse, keyboard, modem, printer, etc. There are sixconnectors on the back panel. You can use proper cables to connect the USB connectors on the board to USB modules or front panel of chassis. In additional, USB 2.0, with a fancy speed up to 480Mbps, is 40 times faster than the traditional ones. Except for the speed increase, USB 2.0 supports old USB 1.0/1.1 software and peripherals, offering impressive and even better compatibility to customers.

Pin 1

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

USB2 Connector

11. IEEE 1394 Connector (for MK77M-1394)

This motherboard comes with IEEE 1394 controller onboard. The IEEE 1394 provides data transfer rate up to 400Mb/s, and USB just has 12Mb/s. Hence, the IEEE 1394 interface can connect with the devices that need high data transferring performance such as digital camera, scanner or others IEEE 1394 devices. Please use the proper cable to connect with devices.

IEEE 1394 Port 1

IEEE 1394 Port 2

Pin 1

10	9	
Shielding GND		KEY
1394_PWR		1394_PWR
TPB-		TPB+
GND		GND
TPA+		TPA-
2	1	

12. S/PDIF Connector

S/PDIF (Sony/Philips Digital Interface) is a newest audio transfer file format, which provides impressive audio quality through optical fiber and allows you to enjoy digital audio instead of analog audio. Through a specific audio cable, you can connect the S/PDIF conn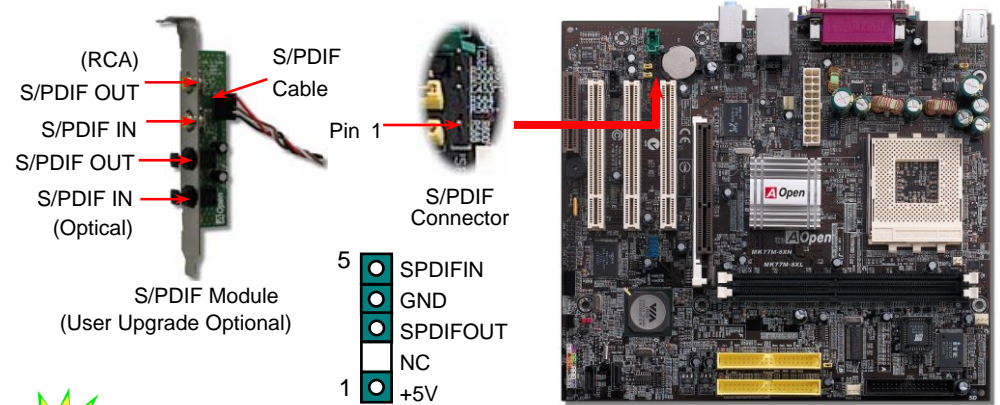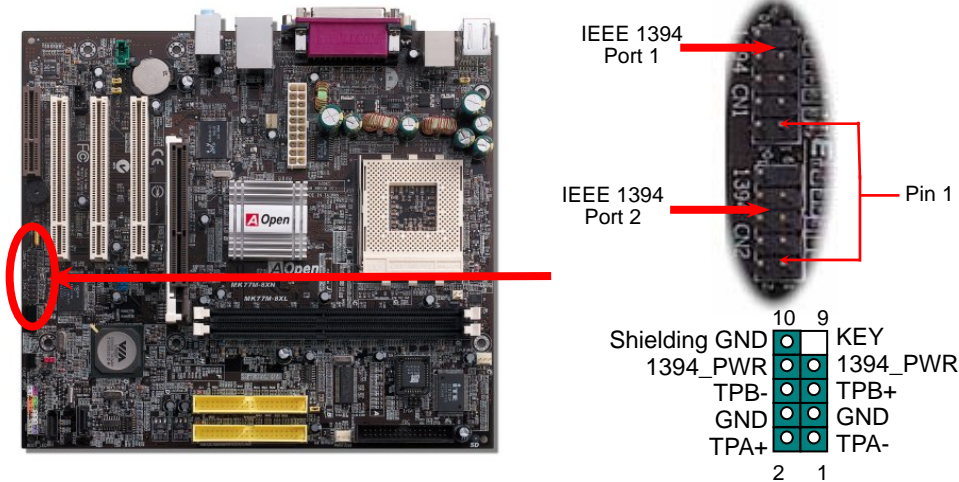ector to other end of the S/PDIF audio module, which bears S/PDIF digital output. Normally there are two S/PDIF outputs as shown, one for RCA connector, the most common one used for consumer audio products, and the other for optical connector with better audio quality. Same as outputs, you can also connect RCA or optical audio products to input connectors on the module and have the voice or music come out from your computer. However, you must have a S/PDIF supported speaker/amplifier/decoder with S/PDIF digital input/output to connect to the S/PDIF digital input/output to make the most out of this function.

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

S/PDIF Cable

Pin 1

S/PDIF Connector

S/PDIF Module
(User Upgrade Optional)

5		SPDIFIN
		GND
		SPDIFOUT
		NC
1		+5V

13. Super 5.1 Channel Audio Effect

This motherboard comes with an ALC650 CODEC, which supports high quality of 5.1 Channel audio effects, bringing you a brand new audio experience. On the strength of the innovative design of ALC650, you're able to use standard line-jacks for surround audio output without connecting any external module. To apply this function, you have to install the audio driver in the Bonus Pack CD as well as an audio application supporting 5.1 Channel. Picture bellow represents the standard location of all speakers in 5.1 Channel sound tracks. Please connect the plug of your front speakers to the green "Speaker out" port, rear speakers' plug to the blue "Line in" port and both of the center and subwoofer speakers to the red "MIC in" port.

Front Left (Green)
Center (Red)
Front Right (Green)
Subwoofer (Red)
Rear Left (Blue)
Rear Right (Blue)
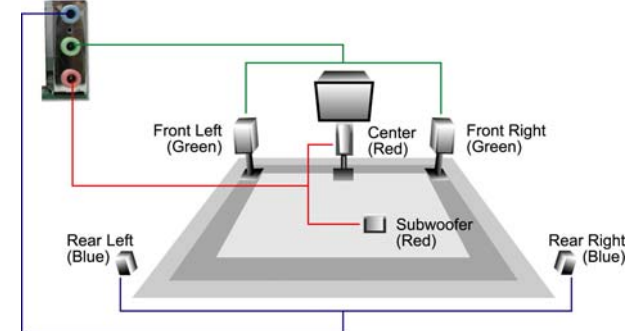
14. 10/100/1000Mbps LAN Onboard

On the strength of Realtek 8100C LAN controller (for MK77M-8XN and MK77M-1394) or 8110S-32 LAN controller (for MK77M-8XL) on board, which are highly integrated platform LAN connect devices, they provide 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 shows yellow whenever accessing to network. The left-hand side LED on RJ45 connector indicates transferring 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.

Left: Transferring
Green (100Mbps)
Orange (1000Mbps)

Right: Linking (Yellow)

16. AOpen Bonus Pack CD

You can use the autorun menu of Bonus CD. Choose the utility and driver and select model name.
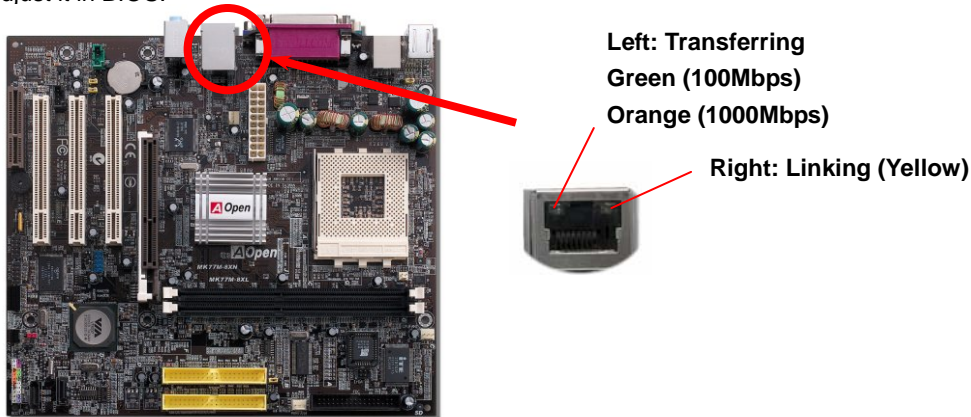
15. Power-on and Load BIOS Setup

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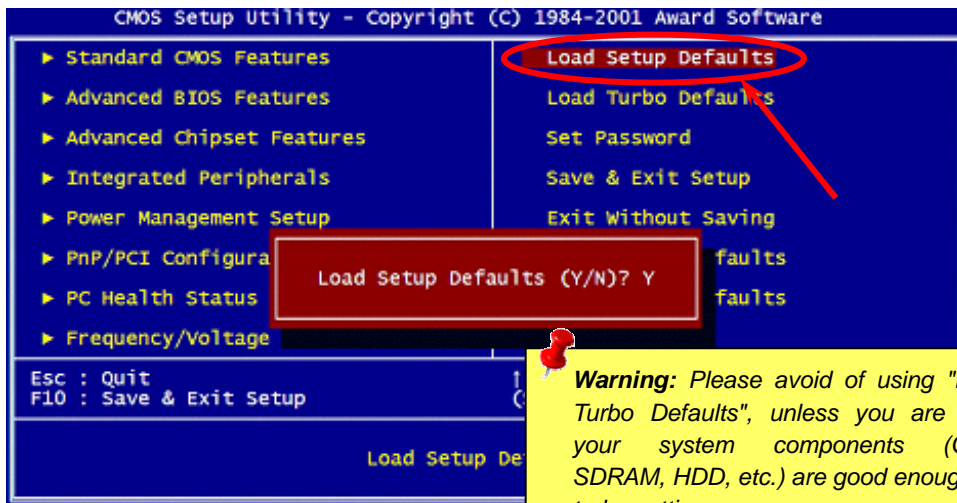
> **Warning:** Please avoid of using "Load Turbo Defaults", unless you are sure your system components (CPU, SDRAM, HDD, etc.) are good enough for turbo setting.

NEW! 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 AOpen official web site. (ex: http://english.aopen.com.tw/)
2. Unzip the download BIOS package (ex: WMK77M8XN102.ZIP) with WinZip (http://www.winzip.com) in Windows environment.
3. Save the unzipped files into a folder, for example, WMK77M8XN102.EXE & WMK77M8XN102.BIN.
4. Double click on the WMK77M8XN102.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.
5. You may select preferred language in the main menu, then click [Start Flash] to start the BIOS upgrade procedure.
6. 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.
7. Press <Del> at POST to enter BIOS setup, choose "Load Setup Defaults", then "Save & Exit Setup". Done!

> **Warning:** The upgrade of new BIOS will permanently replace your original BIOS content after flashing. The original BIOS setting and Win2000/WinXP PnP information will be refreshed and you probably need to re-configure your system.

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 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 this bar code label on the outside packing or on component side of PCB. For example:

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

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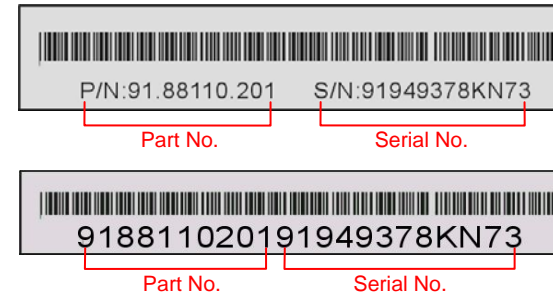
P/N: 91.88110.201 is part number, **S/N: 91949378KN73** is serial number.

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:

MK77M-8XN **R1.02** August 01. 2003   AOpen Inc.

Award Plug and Play BIOS Extension v1.0A

Copyright © 2003, Award Software, Inc.

MK77M-8XN 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 Support 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 Email: Support@AOpen.NL
China 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	Japan AOpen Japan Inc. Tel: 81-048-290-1800 Fax: 81-048-290-1820

Web Site: *http://english.aopen.com.tw/*

E-mail: Send us email by going through the contact form below.

English	*http://english.aopen.com.tw/tech/default.htm*
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.