AOpen
Solutions · Components

MX4BS

Easy Installation Guide

RJ-45 LAN Connector (Optional)

SPP/EPP/ECP Parallel Port

MIDI/Game Port

PS/2 Keyboard Connector

USB Port

COM 1 Connector

COM2 Connector

MIC-In
Line-In
Speaker-Out

MODEM-CN Connector

2M/4Mbit Flash ROM BIOS

CD-IN Connector

Front Panel Audio Connector

32-bit PCI Expansion Slot x3

AGP 4x Expansion Slot

2nd USB Connector

JP14 CMOS Clear Jumper

FDD Connector

Front Panel Connector

Chassis Fan Connector

PC99 Colored Back Panel

IrDA Connector

Low ESR Capacitors

System Fan Connector

4-pin 12V ATX Power Connector

478-pin CPU Socket with Frequency/Voltage Auto-detection that supports Intel® Pentium® 4 1.3GHz~2.4GHz+ CPU

Intel® 845 Chipset

168-pin DIMM Socket x3 supports maximum memory size up to 3GB

CPU Fan

ATX Power Connector

ATA/33/66/100 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 Disc*. Thanks for the help of saving our earth.

# Accessory Checklist

▶ **Motherboard x 1**

▶ **40-Wire IDE Cable x 1**

▶ **80-Wire IDE Cable x 1**

▶ **Floppy Drive Cable x 1**

▶ **Bonus Pack CD x 1**

▶ **This Easy Installation Guide x 1**

▶ **Retention Module**

PART NO: 49.37P02.031   DOC. NO: MX4BS-EG-E0108B

1. JP14 Clear CMOS

You can clear CMOS to restore system default setting. To clear the CMOS, follow the procedure below.
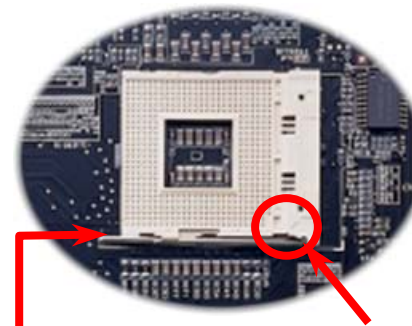
1. Turn off the system and unplug the AC power.

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 pin1 & pin2.

5. Connect ATX power cable back to connector PWR2.

Pin 1 →

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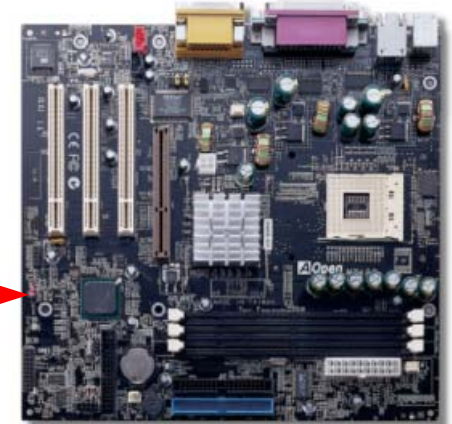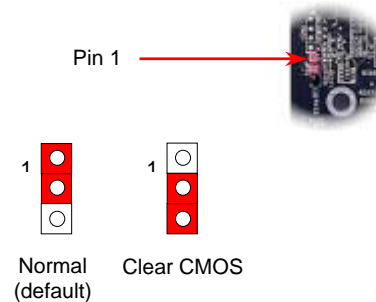
Tip: *When should I Clear CMOS?*

1. Boot fail because of overclocking…

2. Forget password…

3. Troubleshooting…

2. Installing CPU

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.

CPU Pin 1 and cut edge

CPU socket lever

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

3. CPU Fan Installation

This motherboard comes with a retention module attached on the CPU socket when shipped; we strongly recommend you to install AOpen special designed CPU Fan as shown below on the retention module for better heat ventilation.

1. Gently put the CPU fan down on the retention module with clips aligning correctly to the four corners.

2. Pressing down four clips one by one to securely install the CPU fan.

4. Installing CPU & Housing Fan

Plug in the CPU fan cable to the 3-pin **CPU FAN** connector. If you have chassis fan, you can also plug it on **FAN2** or **FAN3** connector (FAN3 doesn't have H/W monitoring).

FAN2 Connector

SENSOR — — GND
+12V

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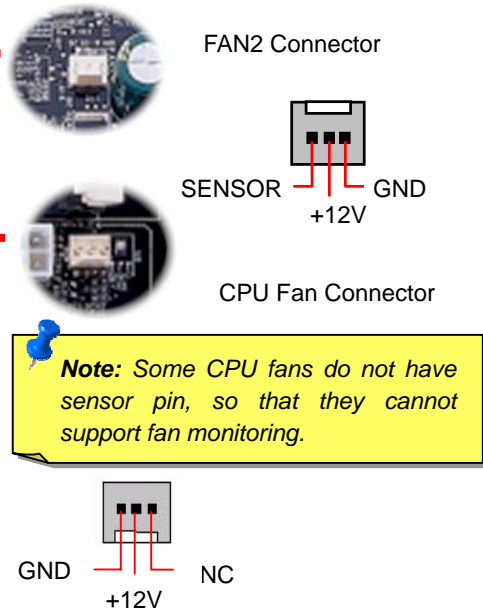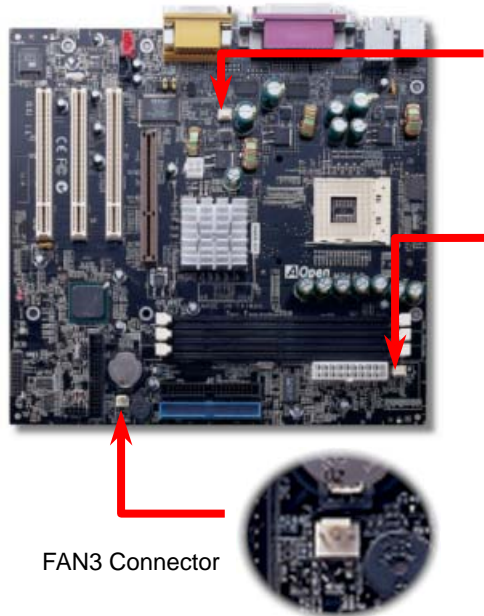
Note: Some CPU fans do not have sensor pin, so that they cannot support fan monitoring.

FAN3 Connector

GND — — NC
+12V

5. Setting CPU Voltage & Frequency

Setting CPU Core Voltage
This motherboard supports CPU VID function. The CPU core voltage will be automatically detected and the range is from 1.10V to 1.85V. It is not necessary to set CPU Core Voltage.

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.

*Core Frequency = CPU FSB Clock * CPU Ratio*

CPU Ratio	8x, 9x, 10x, …….22x, 23x, 24x
CPU FSB	100~180MHz

CPU	CPU Core Frequency	FSB Clock	Ratio
Pentium 4 1.3G	1.3GHz	100MHz	13x
Pentium 4 1.4G	1.4HGz	100MHz	14x
Pentium 4 1.5G	1.5GHz	100MHz	15x
Pentium 4 1.6G	1.6GHz	100MHz	16x
Pentium 4 1.7G	1.7GHz	100MHz	17x
Pentium 4 1.8G	1.8GHz	100MHz	18x
Pentium 4 1.9G	1.9GHz	100MHz	19x
Pentium 4 2.0G	2.0GHz	100MHz	20x
Pentium 4 2.2G	2.2GHz	100MHz	22x
Pentium 4 2.4G	2.4GHz	100MHz	24x

*Warning: Intel® 845 chipset supports maximum 400MHz system bus (100MHz * 4) and 66MHz AGP clock. Higher clock setting may cause serious system damage.*

Tip: If your system hangs or fails to boot because of overclocking, simply use <Home> key to restore the default setting.

6. IrDA Connector

The IrDA connector can be configured to support wireless infrared module. This connector supports HPSIR (115.2Kbps, 2 meters) and ASK-IR (56Kbps).

Install the infrared module onto the **IrDA** connector and enable the infrared function from BIOS Setup, UART2 Mode, make sure to have the correct orientation when you plug in the IrDA connector.

Pin 1

NC		
+5V		GND
IR_TX		IR_RX

7. Front Audio Connector

If the housing has been design 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 Panel Audio Connector before you connect the cable. Do not remove this yellow jumper cap if housing without an audio port on the front panel.

Pin 1

AUD_RET_R
AUD_VCC
AUD_GND
                                    KEY
                                    AUD_RET_L

2 ⬚⬚⬚ ⬚⬚ **10**
1 ⬚⬚⬚ ⬚⬚ **9**

AUD_MIC
AUD_MIC_BIAS
AUD_FPOUT_R
                                    AUD_FPOUT_L
                                    HP_ON

8. Connecting IDE and Floppy Cables

Connect 34-pin floppy cable and 40-pin IDE cable to floppy connector FDD and IDE connector. The **blue connector** is IDE1 for clear identification. Be careful of the pin1 orientation. Wrong orientation may cause system damage.

ATA 33/66/100 IDE Connector

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

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

Pin 1

Pin 1

9. Connecting Front Panel Cable

Pin 1

RESET
SPEAKER

ACPI & Power LED
IDE LED

Power Switch

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**.

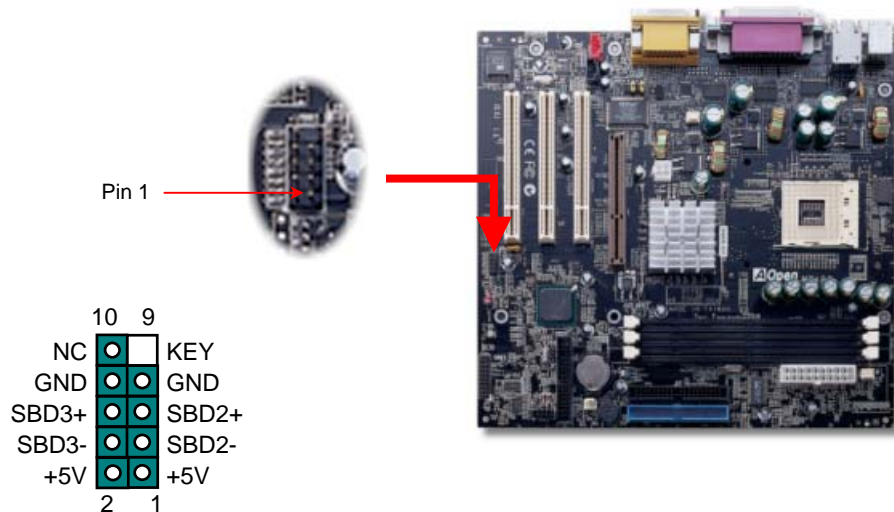|			
GND			SPEAKER
RESET			NC
GND			GND
NC			+5V
NC			+5V
ACPILED+			IDE LED
GND			IDE LED
ACPILED-			+5V
GND			NC
SPWR			NC

1

10. Connecting ATX Power Connector

The ATX power supply uses 20-pin connector shown below. Make sure you plug in the right direction. We strongly recommend you to connect the 4-pin 12V ATX connector before connecting the 20-pin ATX power connector.


```
          3  1
   12V          GND
          4  2
```

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

11. Support 2nd USB Port

This motherboard supports four USB ports. Two of them are on back panel connector, the other two are on the left side of this motherboard. With proper cable, you can connect them to front panel.

Pin 1

```
        10   9
   NC  [O][ ] KEY
   GND [O][O] GND
  SBD3+[O][O] SBD2+
  SBD3-[O][O] SBD2-
   +5V [O][O] +5V
        2    1
```

12. Connecting CD / MODEM Connector

CD-IN
(Black)

The **CD-IN** connector is used to connect CD Audio cable from CDROM or DVD drive to onboard sound.

The **MODEM-CN** connector is used to connect Mono In/ Mic Out cable from internal modem card to onboard sound circuit.

MODEM-CN (Red)

Connector	Pin1	Pin2	Pin3	Pin4
CD-IN	Left	GND	GND	Right
MODEM-CN	Mono In	GND	GND	Mic Out

13. Installing LAN Driver (Optional)

The South Bridge in Intel 845 (Brookdale) chipset integrates a total communication solution including 10/100Mb Fast Ethernet for Office requirement. You can install LAN Driver under Windows95/98, WindowsNT & Windows2000 by following steps.

Manually Adding an Adapter in Windows 95 / 98

===
LOCATION OF DRIVER: \Driver\Lan\E100BNT5.SYS (NDIS 5.0)
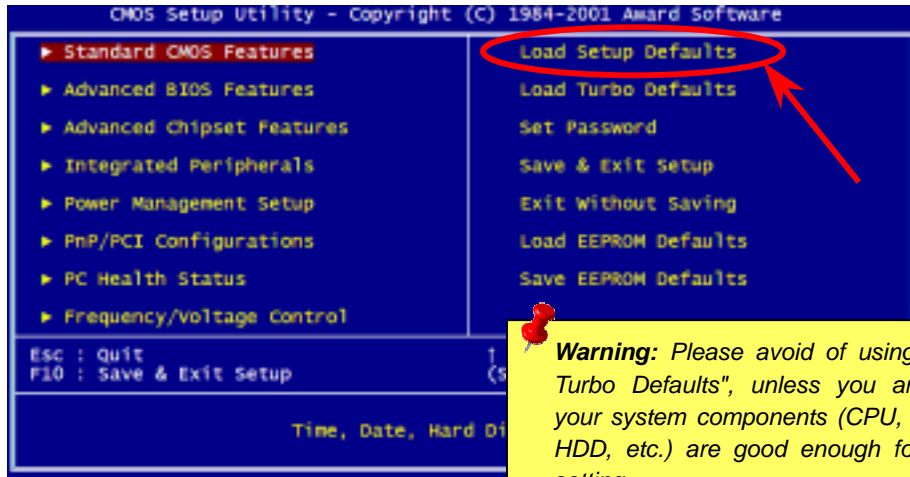LOCATION OF SETUP FILE: \Driver\Lan\NET82557.INF

1. From the Control Panel, double-click the "Add Hardware" icon.
2. Double-click Other Devices or Network Adapters in the list area.
3. Double-click a PCI Ethernet Controller.
4. Click the Driver tab, then click Update Driver.
5. Click Next at the Update Device Driver Wizard.
6. Select "Display a list of all the drivers..." and click Next.
7. Insert the AOpen Bonus CD and click Have Disk.
8. Enter the appropriate drive for your disk media
   (for example: D:\) ,and click OK.
9. Click OK at the Select Device dialog box.
10. The Update Wizard displays the message that it has found
    the driver. Click Next.
11. Click Finish and restart your computer when prompted.
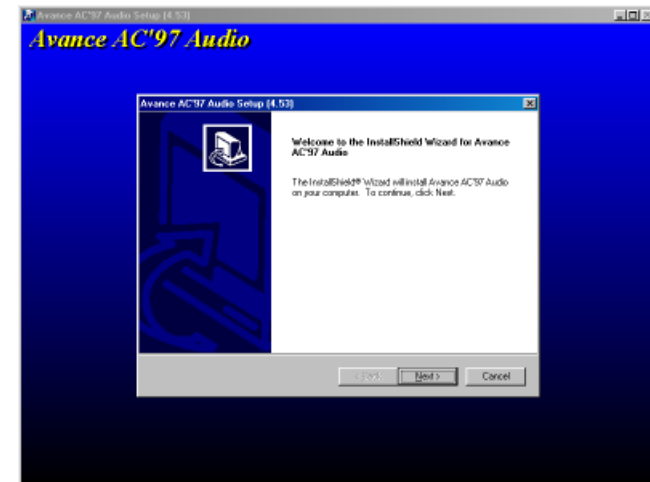
14. Power-on and Load BIOS Setup

`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.

```
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 Configurations           Load EEPROM Defaults
 ► PC Health Status                 Save EEPROM Defaults
 ► Frequency/Voltage Control

Esc : Quit                          ↑
F10 : Save & Exit Setup            (S

              Time, Date, Hard Di
```

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.

15. AOpen Bonus Pack CD

You can use the autorun menu of Bonus CD disc. Choose the utility and driver and select model name.
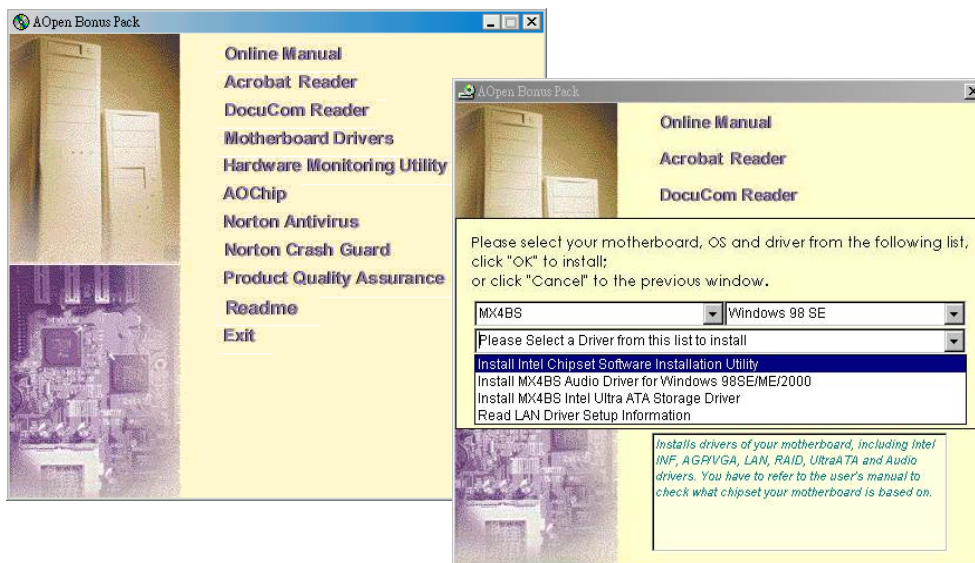

16. Installing Onboard Sound Driver

This motherboard comes with RealTek ALC201 chip, you can find the audio driver from the Bonus Pack CD disc auto-run menu.

17. BIOS Upgrade

AOpen Easy Flash is a user-friendly flash method. The BIOS binary file and flash routine are combined together and you simply run a single file to complete the flash process.

1. Download new BIOS upgrade zipped file from AOpen's web site. For example, MX4BS102.ZIP.

2. Run shareware PKUNZIP (http://www.pkware.com) which supports miscellaneous operation systems to extract the binary BIOS file and the flash utility. Or Winzip (http://www.winzip.com/) in Windows environment.

3. Save the unzipped file into a bootable floppy disk.
   For example, MX4BS102.BIN & MX4BS102.EXE

4. Reboot the system to DOS mode without loading any memory handler (such as EMM386) or device driver. It needs around 520K free memory.

5. Execute A:> MX4BS102 and the program will do the rest of it.

DO NOT turn off the power during FLASH PROCESS until you are asked to!!

6. Reboot system and press <Del> to enter BIOS Setup, Choose "Load Setup Defaults", then "Save & Exit Setup" and finish the BIOS upgrade.

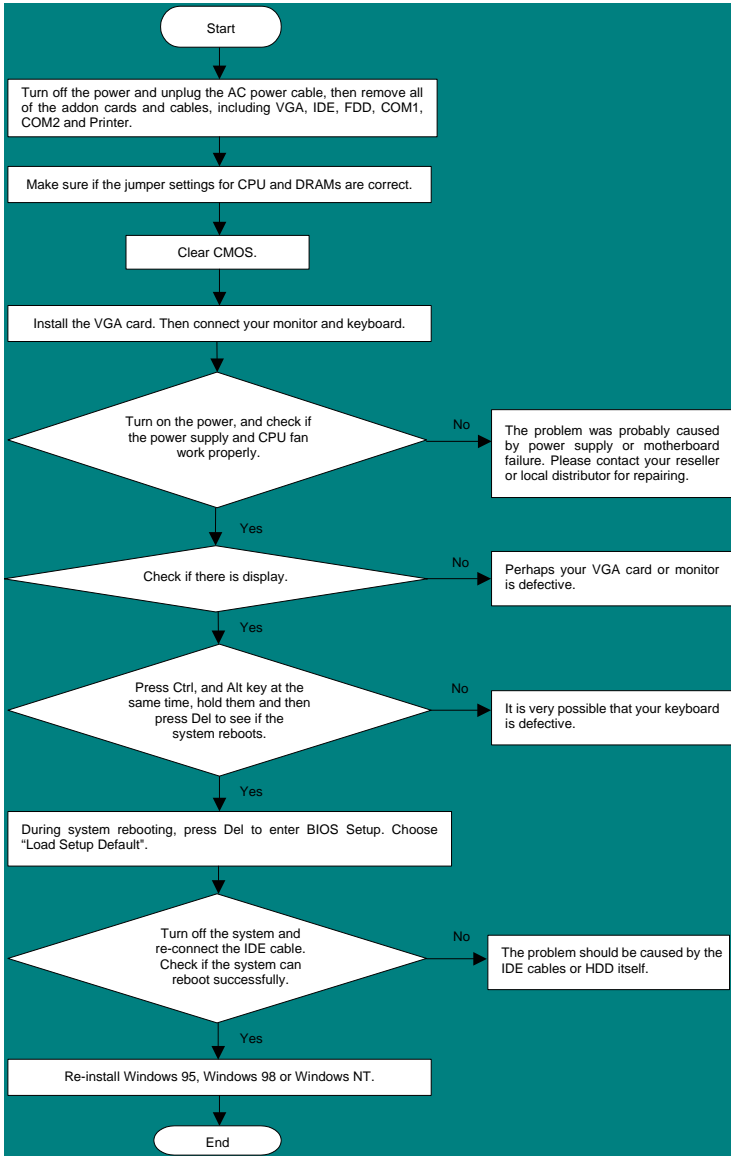*Warning: The upgrade of new BIOS will permanently replace your original BIOS content after flashing. The original BIOS setting and Win95/Win98 PnP information will be refreshed and you probably need to re-configure your system.*

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.       │
              └────────────┬────────────┘
                           │
   ┌───────────────────────┴───────────────────────┐
   │ 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, on ISA/CPU slot or on 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:

MX4BS R1.00 July 01. 2001 AOpen Inc.

Award Plug and Play BIOS Extension v1.0A

Copyright © 1998, Award Software, Inc.

MX4BS is the 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

Pacific Rim AOpen Inc. Tel: 886-2-2696-1333 Fax: 886-2-8691-2233	**Europe** AOpen Computer b.v. Tel: 31-73-645-9516 Fax: 31-73-645-9604
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America AOpen America Inc. Tel: 1-510-498-8928 Fax: 1-408-922-2935, 1-408-432-0496	

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French	*http://aofr.aopen.com.tw/tech/contact/techfr.htm*
Simplified Chinese	*http://www.aopen.com.cn/tech/contact/techcn.htm*

1 **Online Manual:** Please check the manual carefully and make sure the jumper settings and installation procedure are correct.
http://www.aopen.com.tw/tech/download/manual/default.htm

2 **Test Report:** We recommend to choose board/card/device from the compatibility test reports for assembling your PC.
http://www.aopen.com.tw/tech/report/default.htm

3 **FAQ:** The latest FAQ (Frequently Asked Questions) may contain a solution to your problem.
http://www.aopen.com.tw/tech/faq/default.htm

4 **Download Software:** Check out this table to get the latest updated BIOS/utility and drivers.
http://www.aopen.com.tw/tech/download/default.htm

5 **News Group:** Your problem probably had been answered by our support engineer or professional users on the news group.
http://www.aopen.com.tw/tech/newsgrp/default.htm

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 more efficien n important reference for you if next time you want to buy something else from them.

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.