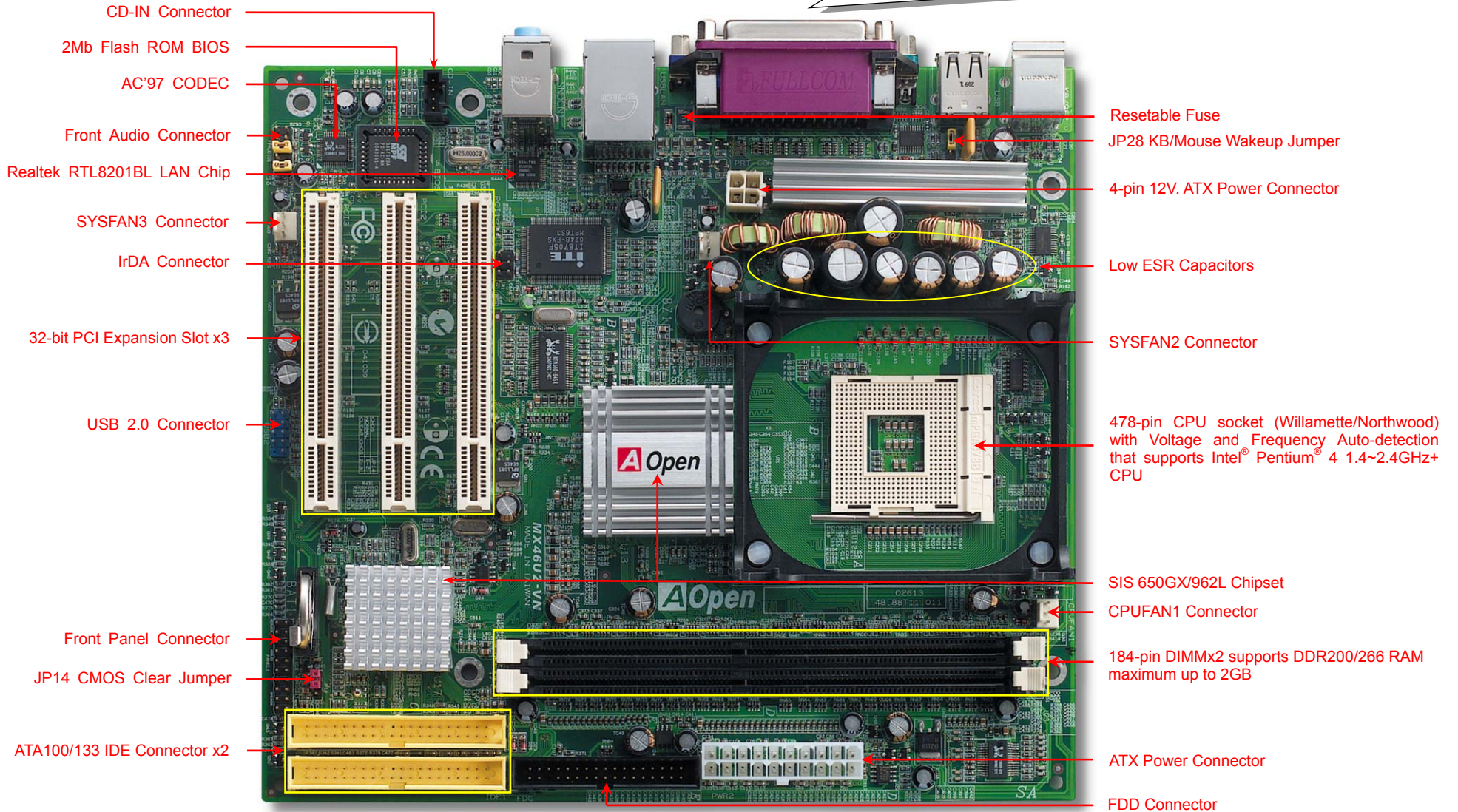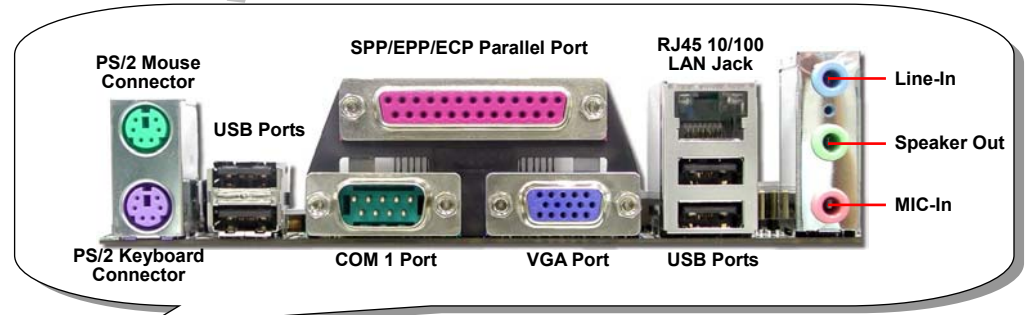# AOpen
Solutions · Components

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

MX46U2-VN

Easy Installation Guide

PS/2 Mouse Connector

USB Ports

PS/2 Keyboard Connector

SPP/EPP/ECP Parallel Port

COM 1 Port

VGA Port

RJ45 10/100 LAN Jack

USB Ports

Line-In

Speaker Out

MIC-In

CD-IN Connector

2Mb Flash ROM BIOS

AC'97 CODEC

Front Audio Connector

Realtek RTL8201BL LAN Chip

SYSFAN3 Connector

IrDA Connector

32-bit PCI Expansion Slot x3

USB 2.0 Connector

Front Panel Connector

JP14 CMOS Clear Jumper

ATA100/133 IDE Connector x2

Resetable Fuse

JP28 KB/Mouse Wakeup Jumper

4-pin 12V. ATX Power Connector

Low ESR Capacitors

SYSFAN2 Connector

478-pin CPU socket (Willamette/Northwood) with Voltage and Frequency Auto-detection that supports Intel® Pentium® 4 1.4~2.4GHz+ CPU

SIS 650GX/962L Chipset

CPUFAN1 Connector

184-pin DIMMx2 supports DDR200/266 RAM maximum up to 2GB

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

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

ATA133

WatchDOG ABS   EzWin Flash

EzRestore   Vivid BIOS

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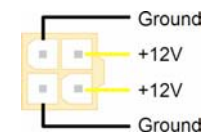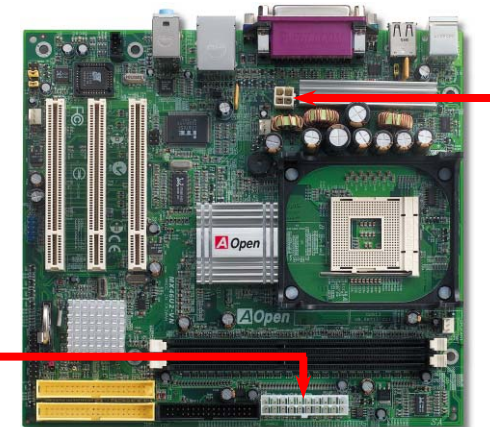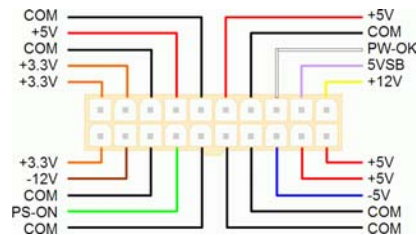5. Connect ATX power cable back to connector PWR2.

Pin 1

1 | Normal (default)   1 | Clear CMOS

Tip: *When should I Clear CMOS?*

1. *Boot fails 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.

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

Ground
+12V
+12V
Ground

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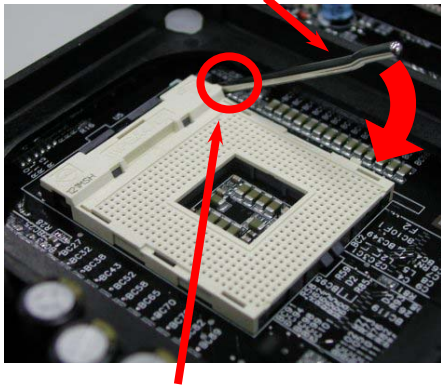
1. Pull up the CPU socket lever and up to 90-degree angle.

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.

CPU Pin 1 and cut edge

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.

SYSFAN2 Connector

GND
+12V
SENSOR

CPUFAN1 Connector

GND
+12V
SENSOR
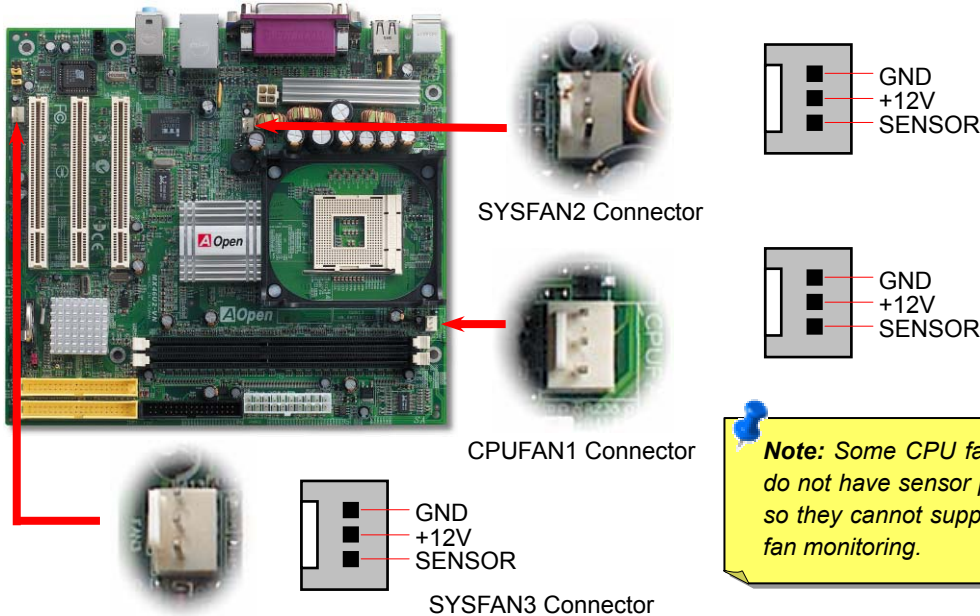
Note: *Some CPU fans do not have sensor pin so they cannot support fan monitoring.*

GND
+12V
SENSOR

SYSFAN3 Connector

5. Setting CPU Voltage and 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 Ratio	

Northwood CPU	CPU Core Frequency	FSB Clock	System Bus	Ratio
Pentium 4 1.6G	1600MHz	100MHz	400MHz	16x
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 2.4G	2400MHz	100MHz	400MHz	24x

Willamette CPU	CPU Core Frequency	FSB Clock	System Bus	Ratio
Pentium 4 1.5G	1500MHz	100MHz	400MHz	15x
Pentium 4 1.6G	1600MHz	100MHz	400MHz	16x
Pentium 4 1.7G	1700MHz	100MHz	400MHz	17x
Pentium 4 1.8G	1800MHz	100MHz	400MHz	18x
Pentium 4 1.9G	1900MHz	100MHz	400MHz	19x
Pentium 4 2.0G	2000MHz	100MHz	400MHz	20x

Celeron CPU	CPU Core Frequency	FSB Clock	System Bus	Ratio
Celeron 1.7G	1700MHz	100MHz	400MHz	17x
Celeron 1.8G	1800MHz	100MHz	400MHz	18x
Celeron 2.0G	2000MHz	100MHz	400MHz	20x
Celeron 2.1G	2100MHz	100MHz	400MHz	21x

Warning: *SIS 650GX Chipset supports maximum 400MHz system bus, higher clock setting may cause serious system damage.*

Note: *Since the latest processor, Northwood, would detect the clock ratio automatically, you may not be able to adjust the clock ratio in BIOS manually.*
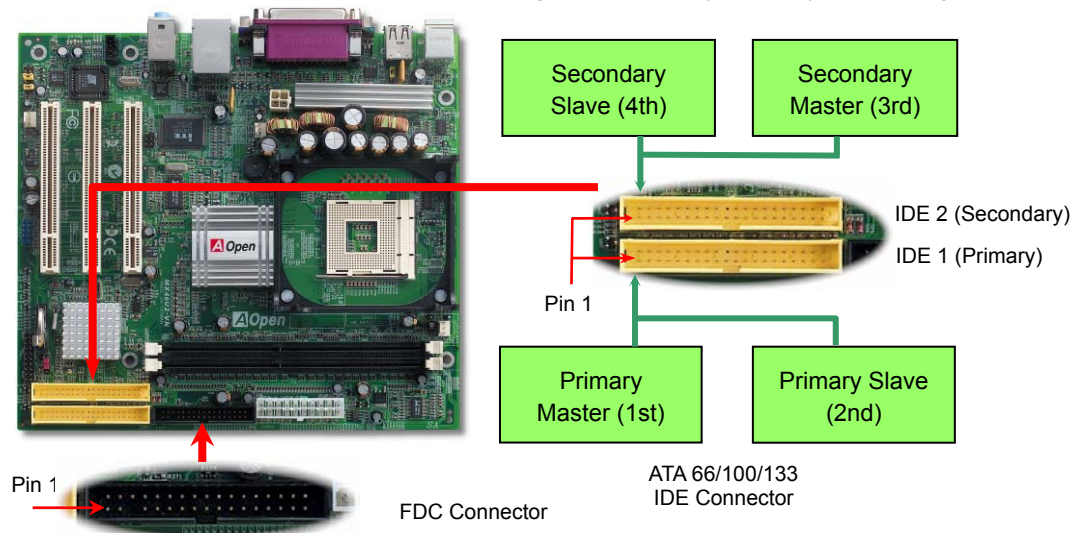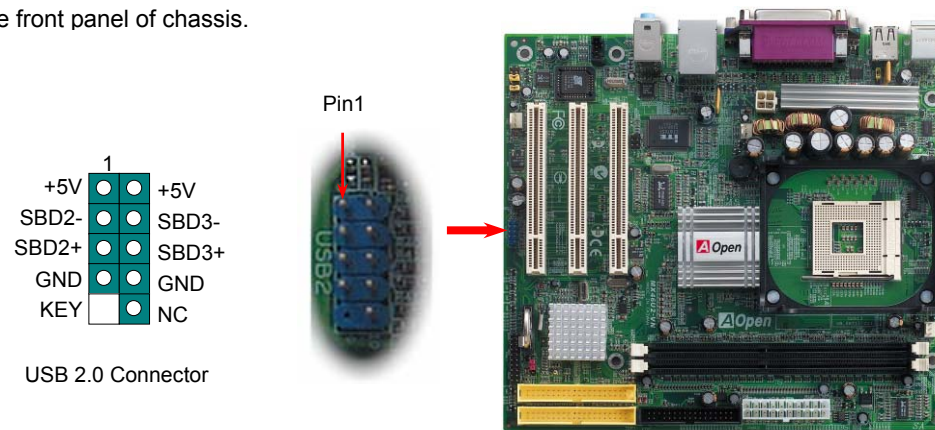
6. Connecting IDE and Floppy Cables

Connect 34-pin floppy cable and 40-pin, 80-wire IDE cable to floppy connector FDC and IDE connector. Be careful of the pin 1 orientation. Wrong orientation may cause system damage.

Secondary Slave (4th)

Secondary Master (3rd)

IDE 2 (Secondary)

IDE 1 (Primary)

Pin 1

Primary Master (1st)

Primary Slave (2nd)

Pin 1

ATA 66/100/133 IDE Connector

FDC Connector

7. 10/100 Mbps LAN onboard

The South Bridge SiS962L includes a fast Ethernet controller on chip. On the strength of RealTek 8201BL PHY on board, which is a highly-integrated Platform LAN Connect device, it provides 10/100M bps Ethernet for office and home use, the Ethernet RJ45 connector is located on top of USB connectors. The orange LED indicates the link mode, it lights when linking to network. The green LED indicates the transfer mode, and it lights when data is transferring. To enable or disable this function, you may simply adjust it through BIOS.

Green/Transfer

Orange/Link

8. Support Six USB 2.0 Connectors

NEW!

This motherboard provides six USB 2.0 ports to connect USB devices such as mouse, keyboard, modem, printer, etc. There are four forts on the PC99 back panel. You can use proper cables to connect USB devices from PC99 back panel or connect USB 2.0 header to the front panel of chassis.

Pin1

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

USB 2.0 Connector

9. 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 these yellow jumpers cap if your housing doesn't have an 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

Front Audio Connector
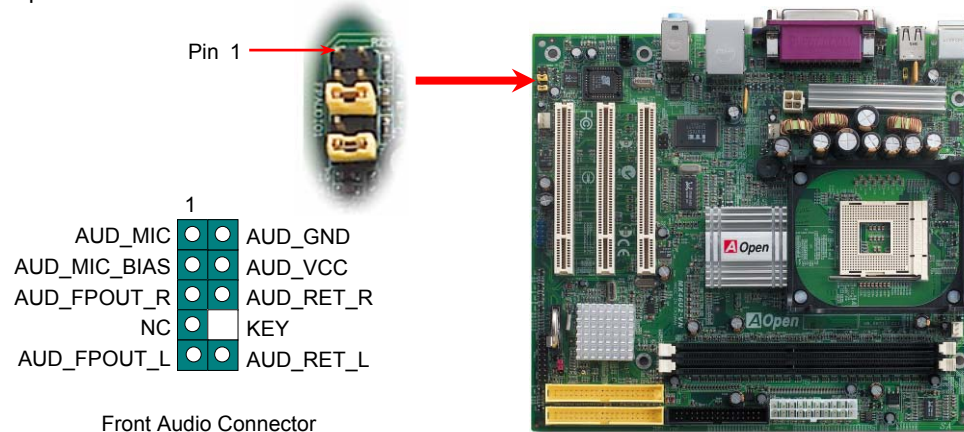
10. JP28 Keyboard/Mouse Wake-up Jumper

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

Disable
(Default)

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

Pin 1

NC	KEY
+5V	GND
IR_TX	IR_RX

IrDA Connector

12. Front Panel Connector

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**.

SPWR

IDE LED

ACPI & PWR LED

ACPI LED (BLUE)

Speaker   Reset

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

13. 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.

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 Confi   efaults
                   Load Setup Defaults (Y/N)? Y
▶ HW Monitor   efaults
▶ Frequency/Volt
                F9 : Menu in BIOS
Esc : Quit
F10 : Save & Exit Setup
                         Load Setu

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.

14. BIOS Upgrade under Windows Environment NEW!

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: WMX46U2102.ZIP) with WinZip (http://www.winzip.com) in Windows environment.

2. Save the unzipped files into a folder, for example, WMX46U2102.EXE & WMX46U2102.BIN.

3. Double click on WMX46U2102.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.

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 AGP, VGA, IDE, Audio, LAN and USB 2.0 drivers from this CD.
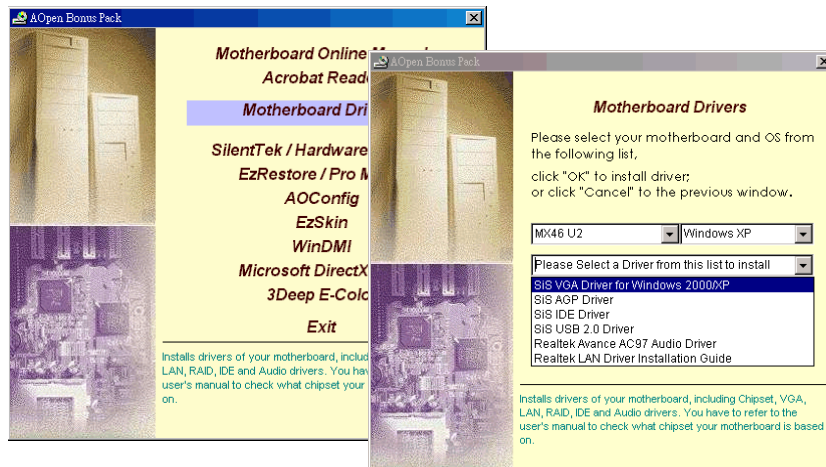
16. Installing Onboard Sound Driver

This motherboard comes with AC97 CODEC. You can find the audio driver from the Bonus Pack CD auto-run menu.
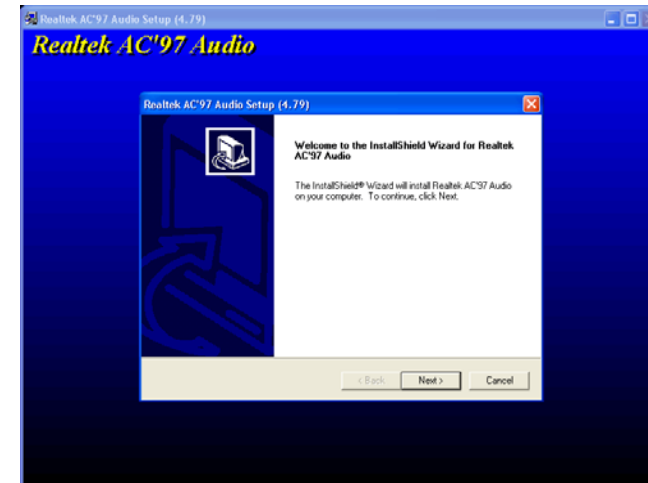
17. Installing Onboard VGA Driver

This motherboard integrates VGA Engine in chipset. You can install VGA driver from the Bonus Pack CD auto-run menu.

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 (if have). Then connect │
│ your monitor and keyboard.                   │
└─────────────────────────────────────────────┘
                        │
                        ▼
        Turn on the power, and check if    No   ┌──────────────────────────────┐
        the power supply and CPU fan  ──────────►│ The problem was probably      │
        work properly.                           │ caused by power supply or     │
                        │ Yes                     │ motherboard failure. Please   │
                        ▼                         │ contact your reseller or      │
                                                  │ local distributor for         │
                                                  │ repairing.                    │
                                                  └──────────────────────────────┘
        Check if there is display.        No    ┌──────────────────────────────┐
                                    ──────────►  │ Perhaps your VGA card or      │
                        │ Yes                    │ monitor is defective.         │
                        ▼                         └──────────────────────────────┘

        Press Ctrl, and Alt key at the    No    ┌──────────────────────────────┐
        same time, hold them and then  ────────►│ It is very possible that your │
        press Del to see if the                  │ keyboard is defective.        │
        system reboots.                          └──────────────────────────────┘
                        │ Yes
                        ▼
┌─────────────────────────────────────────────┐
│ During system rebooting, press Del to enter  │
│ BIOS Setup. Choose "Load Setup Default".     │
└─────────────────────────────────────────────┘
                        │
                        ▼
        Turn off the system and            No   ┌──────────────────────────────┐
        re-connect the IDE cable.    ──────────►│ The problem should be caused  │
        Check if the system can                  │ by the IDE cables or HDD      │
        reboot successfully.                     │ itself.                       │
                        │ Yes                     └──────────────────────────────┘
                        ▼
┌─────────────────────────────────────────────┐
│ Re-install Windows 95, Windows 98, Windows   │
│ XP or Windows NT.                            │
└─────────────────────────────────────────────┘
                        │
                        ▼
                     ( End )
```
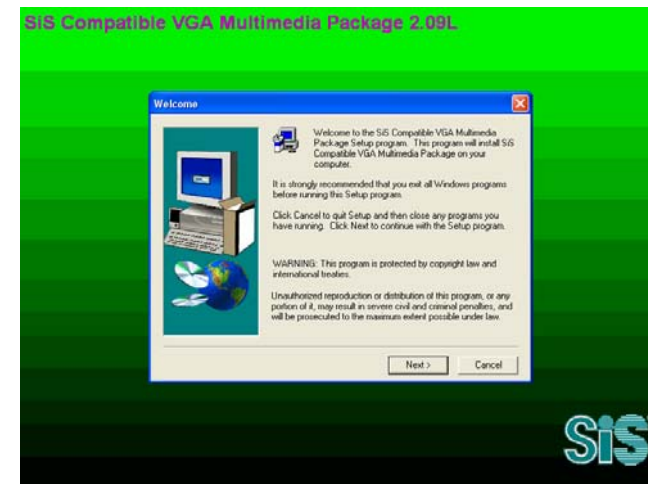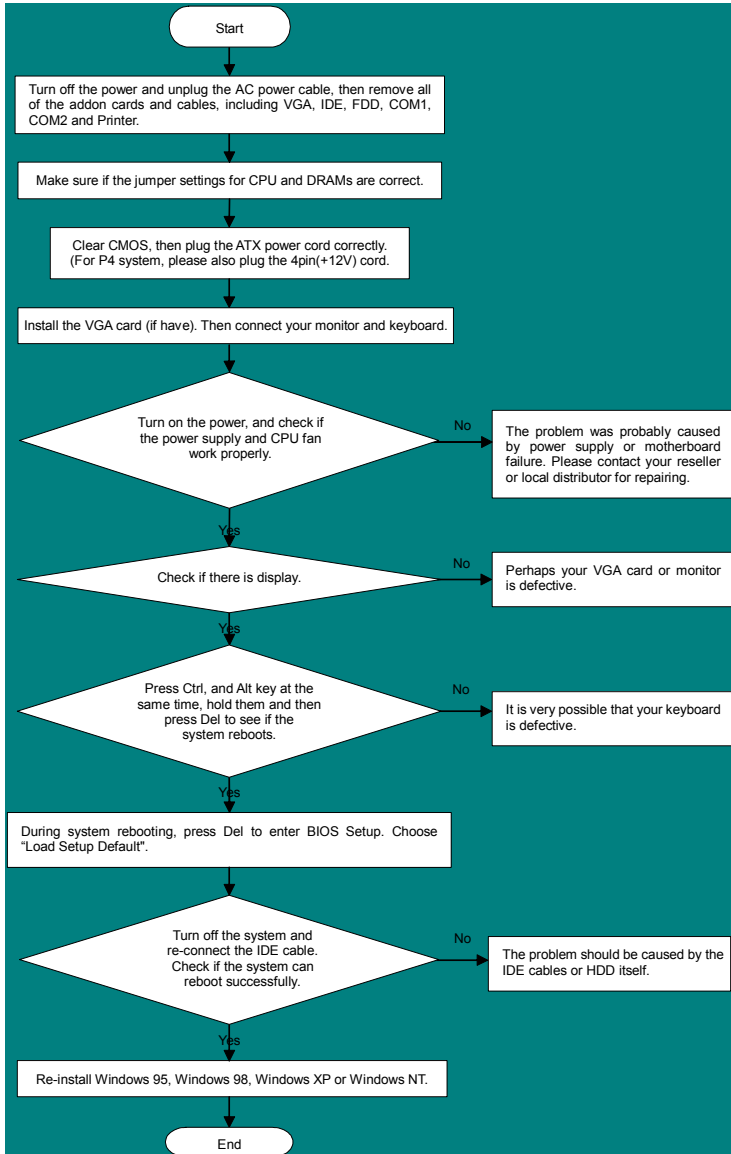
Part Number and Serial Number

The Part Number and Serial number are printed on bar code label. You can find the bar code label on the outside packing, 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.
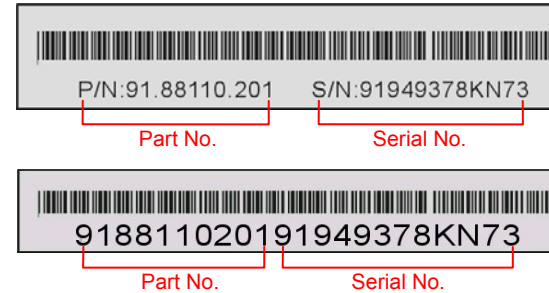
P/N: 91.88110.201 is part number, **S/N: 91949378KN73** is serial number.

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:

MX46 U2-VN **R1.00** Mar 01. 2003   AOpen Inc.

Award Plug and Play BIOS Extension v1.0A

Copyright © 2003,   Award Software, Inc.
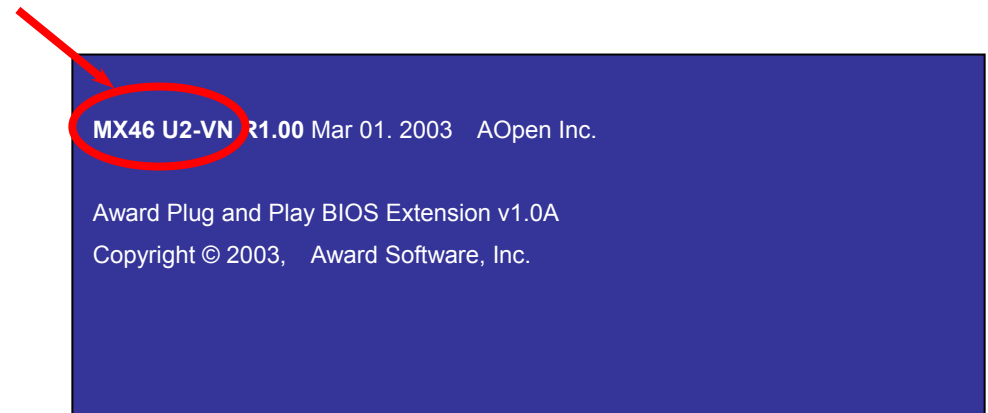
MX46 U2-VN is model name of motherboard; **R1.00** is BIOS version

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 to follow the procedures below and seek help before contacting 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 艾尔鹏国际贸易(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: 49-1805-559191 Fax: 49-2102-157799	Japan AOpen Japan Inc. Tel: 81-048-290-1800 Fax: 81-048-290-1820

Web Site: *http://www.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://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 may be able to 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.