AX4PER-G
AX4PER-GN

Easy Installation Guide

- RealTek RTL8101L (For AX4PER-GN)
- Game Port Connector
- CD-IN Connector
- Onboard AC'97 CODEC
- Front Audio Connector
- IrDA Connector
- 32-bit PCI Expansion Slot x6
- USB 2.0 Connector
- SYSFAN3 Connector
- JP28 Keyboard/Mouse Wakeup Jumper
- 4-pin 12V. ATX Power Connector
- 2200μF Low ESR Capacitors
- SYSFAN2 Connector
- 4x AGP slot
- 478-pin CPU socket with Voltage and Frequency Auto-detection that supports Intel® Pentium® 4 1.4~3.06GHz+ CPU
- Intel® 845PE chipset
- CPUFAN1 Connector
- 184-pin DIMMx2 supports DDR333/DDR266 Max. to 2GB
- ATX Power Connector
- ATA/33/66/100 IDE Connector x2

PS. Here we use AX4PER-GN motherboard as illustration.
1. JP14 Clear CMOS

You can clear CMOS to restore system default settings. 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.

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.

Accessory Checklist

- Motherboard x1
- Easy Installation Guide x1
- 80-wire IDE Cable x1
- Floppy Disk Drive Cable x1
- Retention Module x1
- EzRestore Guide x1
- Bonus Pack CD x1

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.
3. Installing Processor

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

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 on SYSFAN2 or SYSFAN3 connector.

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

5. Setting CPU 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 Frequency Setting**

**Core Frequency = CPU FSB Clock * CPU Ratio**

<table>
<thead>
<tr>
<th>CPU Ratio</th>
<th>8x, 9x, 10x... 21x, 22x, 23x, 24x</th>
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<tbody>
<tr>
<td>CPU FSB</td>
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<table>
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<th>FSB Clock</th>
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<td>13x</td>
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<td>18x</td>
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<table>
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<th>Ratio</th>
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</table>

**Warning:** Intel 845PE supports maximum 533MHz system bus and 66MHz AGP clock; 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.

7. Case Open Connector

The “CASE OPEN” header provides chassis intrusion-monitoring function. To make this function works, you have to enable it in the system BIOS, connect this header to a sensor somewhere on the chassis. So, whenever the sensor is triggered by lights or by the opening of the chassis, the system will beep to inform you. Please be informed that this useful function only applies to advanced chassis, you may purchase an extra sensor, attach it on your chassis, and make a good use of this function.

8. 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.

9. Support Six USB 2.0 Connectors

This motherboard provides six USB 2.0 connectors. Compared to traditional USB 1.0/1.1 with the speed of 12Mbps, USB 2.0 has a fancy speed up to 480Mbps, which is 40 times faster than the traditional one.
10. Connecting Front Panel Cable

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.

11. 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 caps from the Front Audio Connector before you connect the cable. Do not remove the yellow jumper caps if your housing doesn’t have an audio port on the front panel.

12. 10/100 Mbps LAN onboard (For AX4PER-GN)

The South Bridge ICH4 includes a fast Ethernet controller on chip. On the strength of RealTek 8101L LAN controller 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.

13. 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.
14. AOpen Bonus Pack CD

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

This motherboard comes with **AC97 CODEC**. You can find the audio driver from the Bonus Pack CD auto-run menu.

15. Installing Onboard Sound Driver

16. Power-on and Load BIOS Setup

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.

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://www.aopen.com)
3. Save the unzipped files into a folder, for example, WPRGN102.EXE & WPRGN102.BIN.
4. Double click on the WPRGN102.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:** Please avoid of using "Load Turbo Defaults", unless you are sure your system components (CPU, DRAM, HDD, etc.) are good enough for turbo setting.

It is strongly recommended NOT to turn off the power or run any application during FLASH PROCESS.
If you encounter any trouble to boot you system, follow the procedures accordingly to resolve the problem.

**Troubleshooting**

1. **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.

2. **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.)

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

4. **Turn on the power, and check if the power supply and CPU fan work properly.**
   - Check if there is display.
   - Press Ctrl, and Alt key at the same time, hold them and then press Del to see if the system reboots.

5. **During system rebooting, press Del to enter BIOS Setup. Choose “Load Setup Default”**

6. **Turn off the system and re-connect the IDE cable. Check if the system can reboot successfully.**

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

8. **Check if there is display.**

9. **During system rebooting, press Del to enter BIOS Setup. Choose “Load Setup Default”.**

10. **Turn off the system and re-connect the IDE cable. Check if the system can reboot successfully.**

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

12. **Start**

**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 the component side of PCB. For example:

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Serial No.</th>
</tr>
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<tr>
<td>918811020191949378KN73</td>
<td>Part No.</td>
</tr>
</tbody>
</table>

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:

**AX4PER-GN R1.00**

Feb. 01. 2003 AOpen Inc.

Award Plug and Play BIOS Extension v1.0A

Copyright © 2003, Award Software, Inc.

**AX4PER-GN** is model name of motherboard; **R1.00** is BIOS version.
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

**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.


**Test Report:** We recommend you to choose board/card/device from the compatibility test reports for assembling your PC. It may prevent incompatibility problems.


**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.


**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.


**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".


**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.

**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.