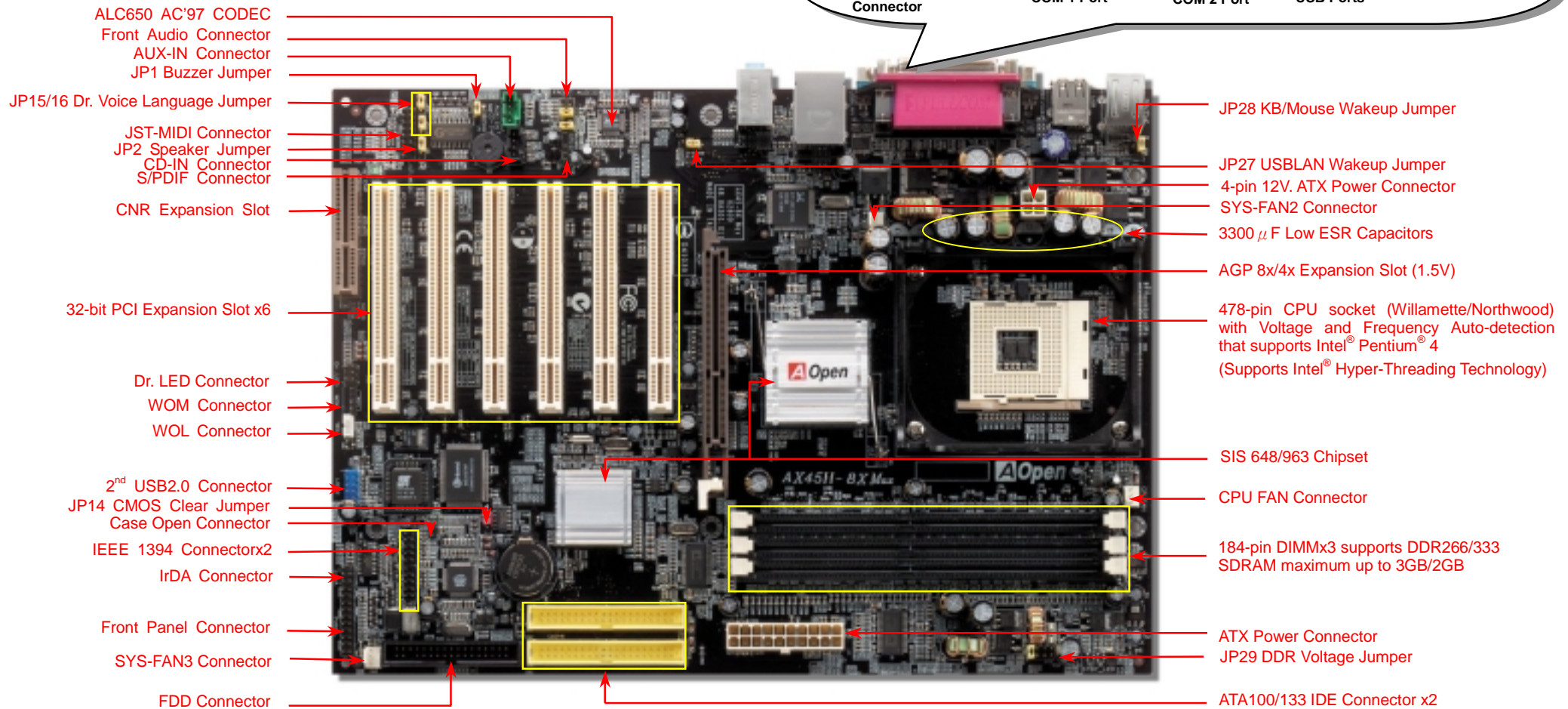
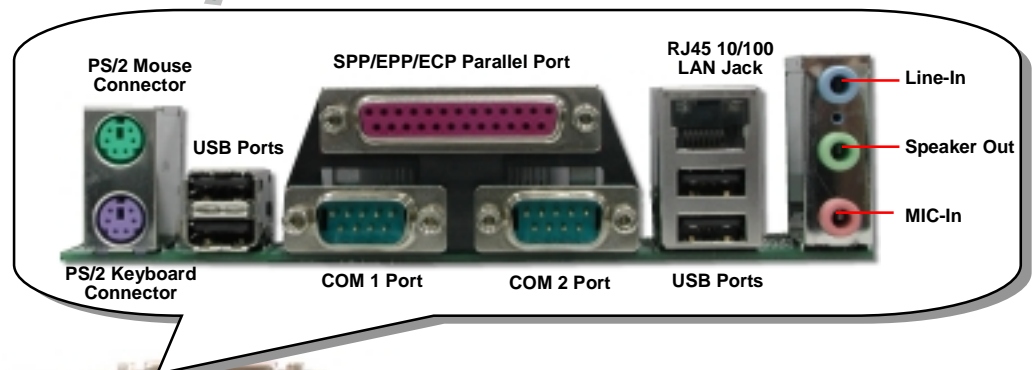


AX45H-8X Max

Easy Installation Guide



(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

- ☒ User's Manual x1
- ☒ This Easy Installation Guide x1
- ☒ 40-wire IDE Cable x1
- ☒ 80-wire IDE Cable x1
- ☒ Floppy Disk Drive Cable x1
- ☒ Registration Card x1
- ☒ Bonus Pack CD x1
- ☒ Anti-Virus CD x1
- ☒ I/O Shield x1
- ☒ S/PDIF Module x1
- ☒ IEEE1394 Cable x1
- ☒ USB2.0 Cable x1



PART NO: 49.8A302.011

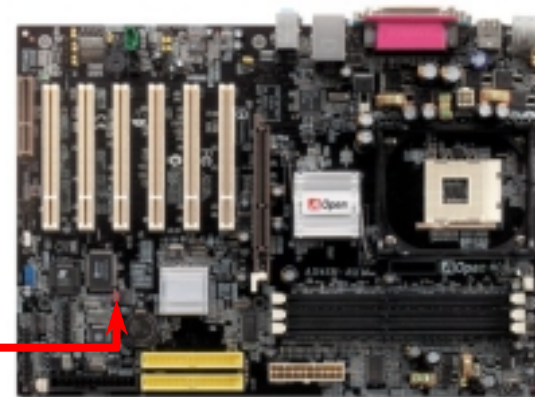
DOC. NO: AX45H8XMAX-EG-E0212A

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



Normal
(default)



Clear CMOS

Tip: When should I Clear CMOS?

1. Boot fail because of overclocking...
2. Forget password...
3. Troubleshooting...

2. JP27/28 Keyboard/Mouse Wakeup Jumper

This motherboard provides USB and PS2 keyboard / mouse wake-up function. You can use JP27 / JP28 to enable or disable the resuming of your system from suspend mode with any USB keyboard or mouse connected. JP28 controls 1st USB channel, and JP27 controls 2nd USB channel. The factory default setting is set to "Disable"(1-2), and you may enable this function by setting the jumper to 2-3. Please note that you have to enable USB, PS2 keyboard and PS2 mouse settings in the "Power Management Setup" section in BIOS before you use this function.

2nd USB Channel

JP27 KB/Mouse
Wakeup



Enable



Disable
(Default)

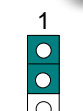
Pin 1



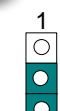
1st USB Channel

Pin 1

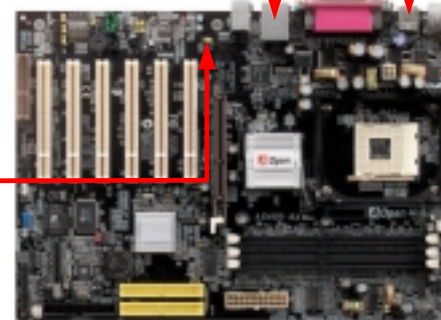
JP28 KB/Mouse
Wakeup



Disable
(Default)



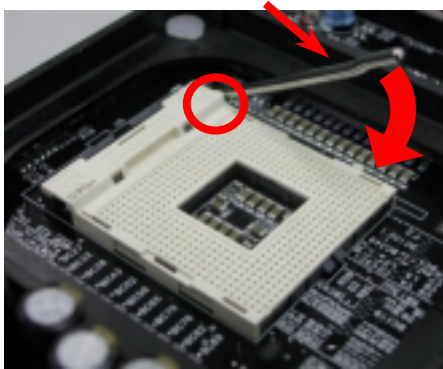
Enable



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

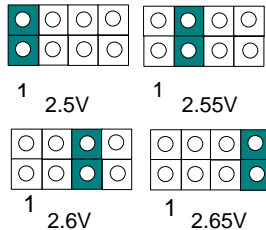


1. Pull up the CPU socket lever and up to 90-degree angle.
2. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper interface. Match Pin 1 and cut edge. Then insert the CPU into the socket.
3. Press down the CPU socket lever and finish CPU installation.

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

4. JP29 DDR Voltage Jumper

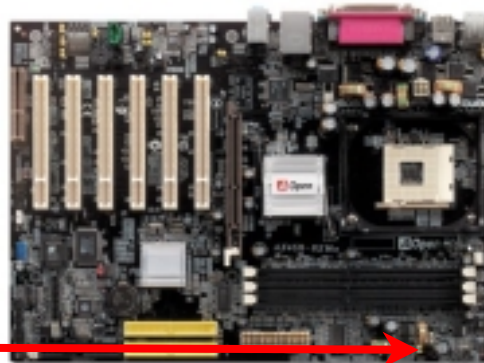
This motherboard supports all DDR200/266/333 DDR SDRAM in the market; therefore you don't need to adjust this JP29 memory voltage jumper from its default setting. However, if you wish to use DDR400 SDRAM which requires higher voltage on this motherboard, you may have to adjust the jumper to set a suitable voltage supply from 2.5V to 2.65V.



Note: Since this motherboard mainly supports DDR266/333 SDRAM, we don't guarantee that DDR400 SDRAM is workable on this board.



Pin 1



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 Speed Setting" for overclocking.

BIOS Setup > Frequency / Voltage Control > CPU Speed Setup

CPU Ratio	8x,.....30x
CPU FSB (By BIOS table) (By Manual)	100 and 133MHz 100~248MHz by 1MHz stepping

Northwood CPU	CPU Core Frequency	FSB Clock	System Bus	Ratio
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 2.26G	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 2.66G	2660MHz	133MHz	533MHz	20x
Pentium 4 2.80G	2800MHz	133MHz	533MHz	21x
Pentium 4 3.06G	3060MHz	133MHz	533MHz	23x

Warning: SIS 648 Chipset supports maximum 533MHz system bus and 66MHz AGP clock; higher clock setting may cause serious system damage.

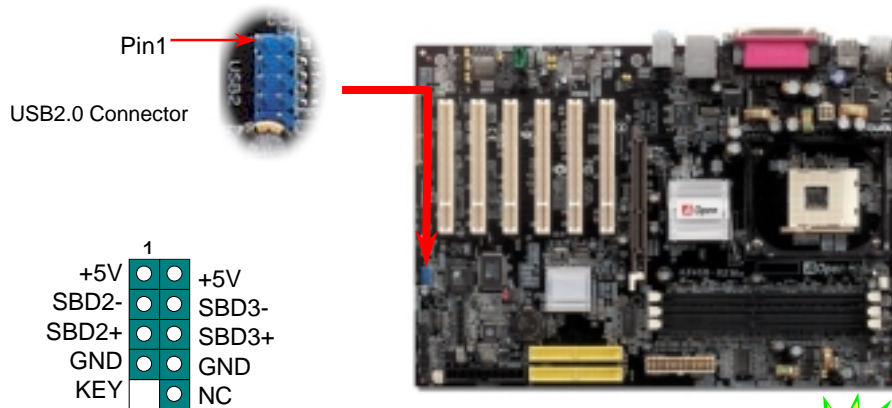
Willamette CPU	CPU Core Frequency	FSB Clock	System Bus	Ratio
Pentium 4 1.5G	1500MHz	100MHz	400MHz	15x
Pentium 4 1.6G	1600MHz	100MHz	400MHz	16x
Pentium 4 1.7G	1700MHz	100MHz	400MHz	17x
Pentium 4 1.8G	1800MHz	100MHz	400MHz	18x
Pentium 4 1.9G	1900MHz	100MHz	400MHz	19x
Pentium 4 2.0G	2000MHz	100MHz	400MHz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

Celeron CPU	CPU Core Frequency	FSB Clock	System Bus	Ratio
1.7G	1700MHz	100MHz	400MHz	17x
1.8G	1800MHz	100MHz	400MHz	18x

Note: Since some of the latest CPU would detect the clock ratio automatically, you may not be able to adjust the clock ratio of some CPU in BIOS manually. BIOS will show the adjustable settings for customers to choose.

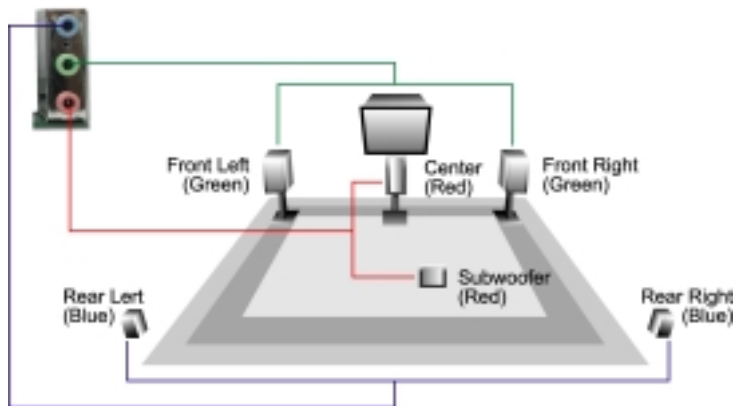
6. Support Six USB Ports

This motherboard provides six [USB](#) ports to connect USB devices such as mouse, keyboard, modem, printer, etc. There are four connectors on the back panel. You can use proper cables to connect USB devices from back panel or connect USB2 header to the front panel of chassis.



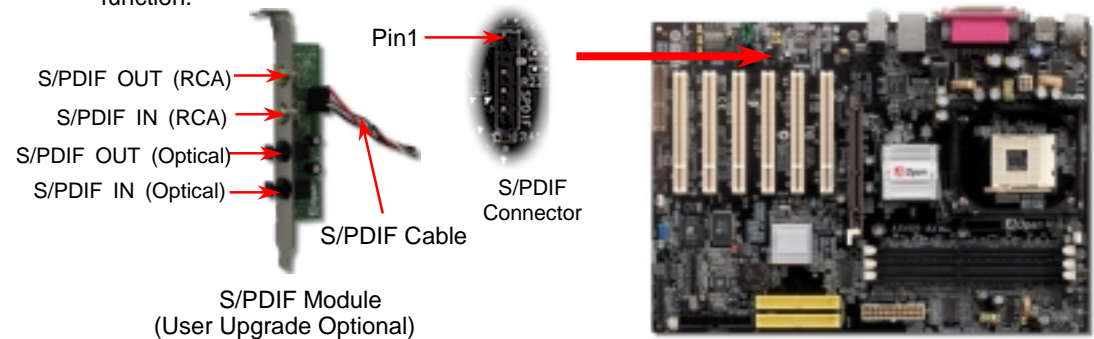
7. Super 5.1 Channel Audio Effect

This motherboard comes with an ALC650 Codec which supports high quality of 5.1 Channel audio effect, 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 below represents the standard location of all speakers in 5.1 Channel sound track. 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.



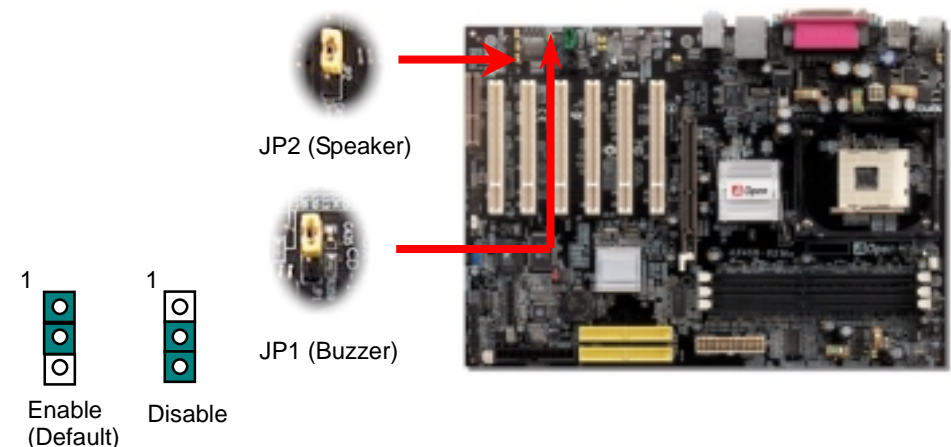
8. S/PDIF Connector

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.



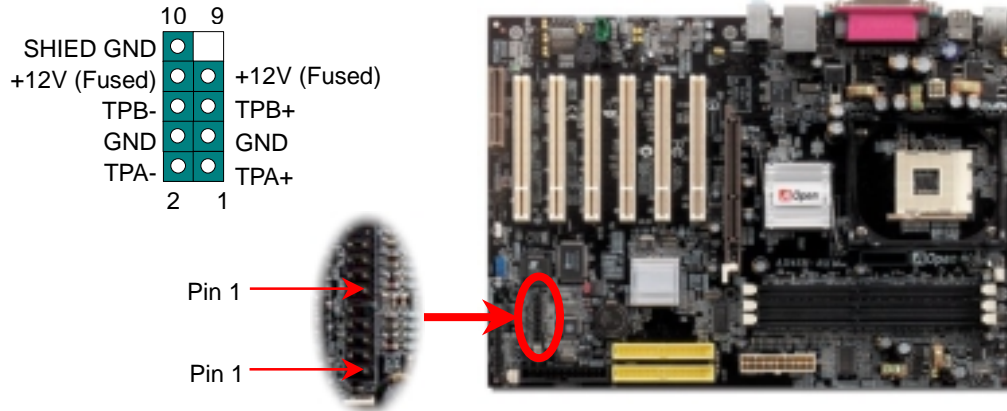
9. JP1/2 Buzzer and Speaker Jumper

This motherboard comes with another considerate option that allows you to turn off the voice from buzzer and speaker. You can choose not to be bothered by the warning made from Dr. Voice when it detects any error in operating system. To disable this function, set JP1 and JP2 to pin 2-3 to stop both the buzzer and speaker from sending out voices.



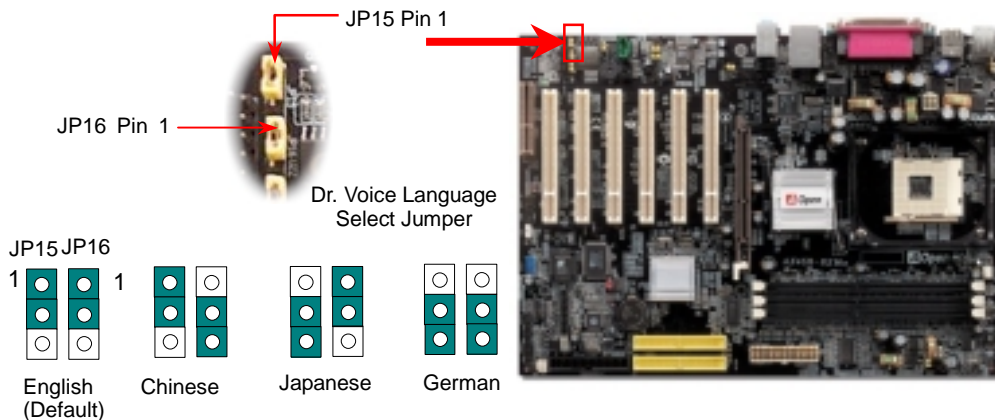
10. IEEE 1394 Connectors

This motherboard has two IEEE 1394 connectors onboard. The IEEE 1394 provides data transfer rate up to 400Mb/s. Therefore 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.



11. Dr. Voice and JP15/16

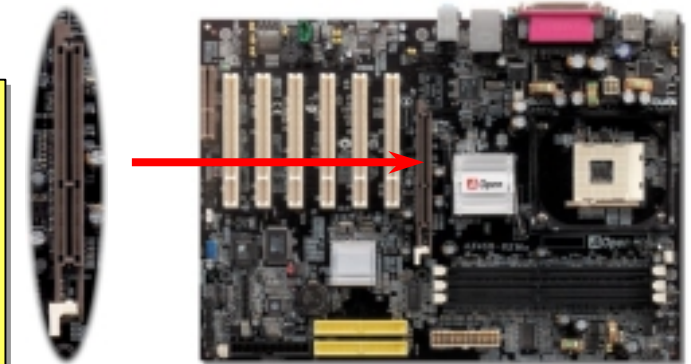
Dr. Voice is a great feature which can identify the problems you may encounter in the operating system. It can clearly **"tell you"** whether the problem is caused from components or improper installation such as CPU, memory module, VGA, PCI add-on card, FDD, HDD or keyboard. Dr. Voice provides four language versions: **English**, **German**, **Japanese** and **Chinese**. You can select your preferred language by **JP15** & **JP16** jumpers. However, if you want to disable this function, you may also adjust both JP1 and JP2 and set them to pin 2-3 to disable the buzzer and speaker from making out voices.



12. AGP 8X Expansion Slot

This model provides an **AGP** 8x slot which is the latest AGP specification. The AGP 8x calls for the bus to operate at the basic AGP 66-MHz clock frequency and the bandwidth is 2.1Gbytes/s. It is a great improvement on the performance of 3D graphic. AGP supports only memory read/write operation and single-master single-slave one-to-one only. AGP uses both rising and falling edge of the 66MHz clock, for 2X AGP, the data transfer rate is $66\text{MHz} \times 4\text{bytes} \times 2 = 528\text{MB/s}$ and AGP 4x mode, $66\text{MHz} \times 4\text{bytes} \times 4 = 1056\text{MB/s}$. Now the transfer rate is $66\text{MHz} \times 4\text{bytes} \times 8 = 2112\text{MB/s}$.

Warning: It is strongly recommended not to install a 3.3V AGP card, which is not supported by SIS648. When you do so, the AGP LED on the motherboard will light up to warn you the possible damage.

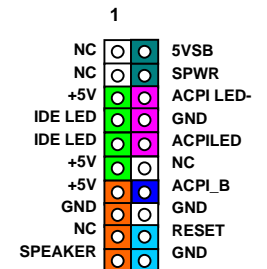


13. Front Panel Connector



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.

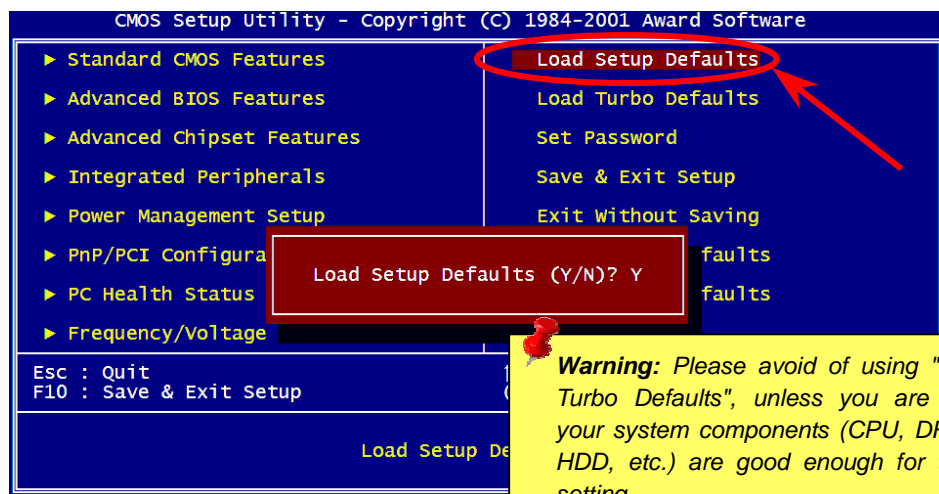
Locate the power switch cable from your ATX housing. It is 2-pin female connector from the housing front panel. Plug this connector to the soft-power switch connector marked **SPWR**.



14. Power-on and Load BIOS Setup

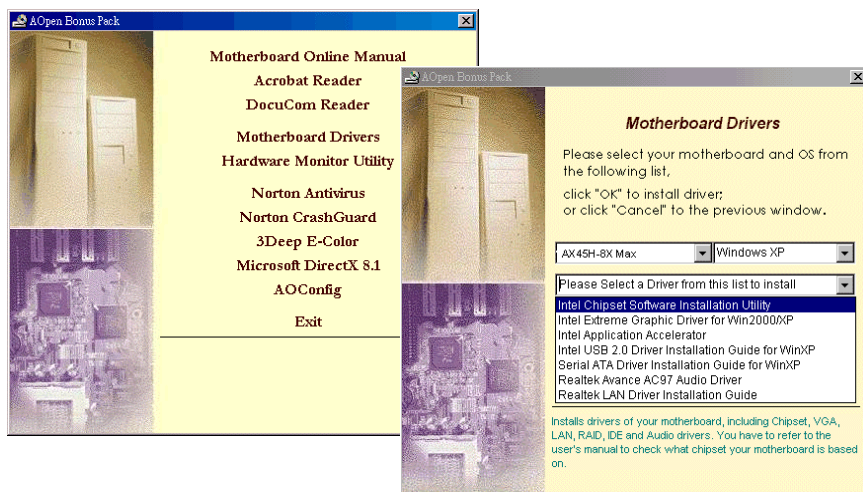
Del

After you finish jumper settings and connect correct cables, power on and enter the BIOS Setup. Press during POST (Power On Self Test). Choose "Load Setup Defaults" for recommended optimal performance.



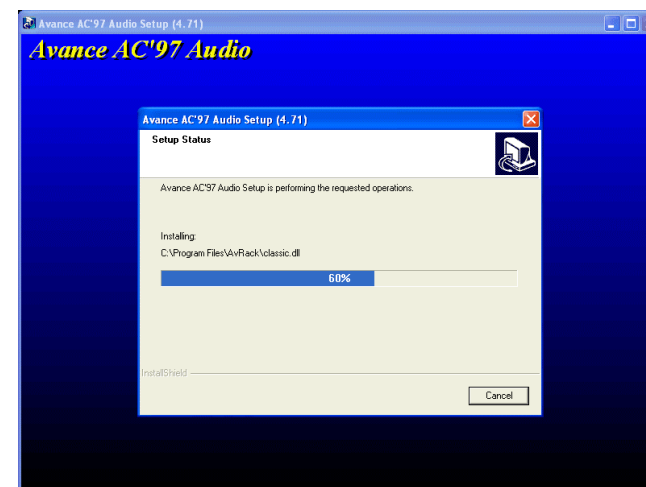
15. AOpen Bonus Pack CD

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, IDE, Audio, LAN and USB2.0 drivers from this CD.



16. Installing Onboard Sound Driver

This motherboard comes with RealTek ALC650 [AC97 CODEC](#). This audio driver supports Windows 98SE and upper Windows OS; you can find the audio driver from the Bonus Pack CD auto-run menu.



17. BIOS Upgrade

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.

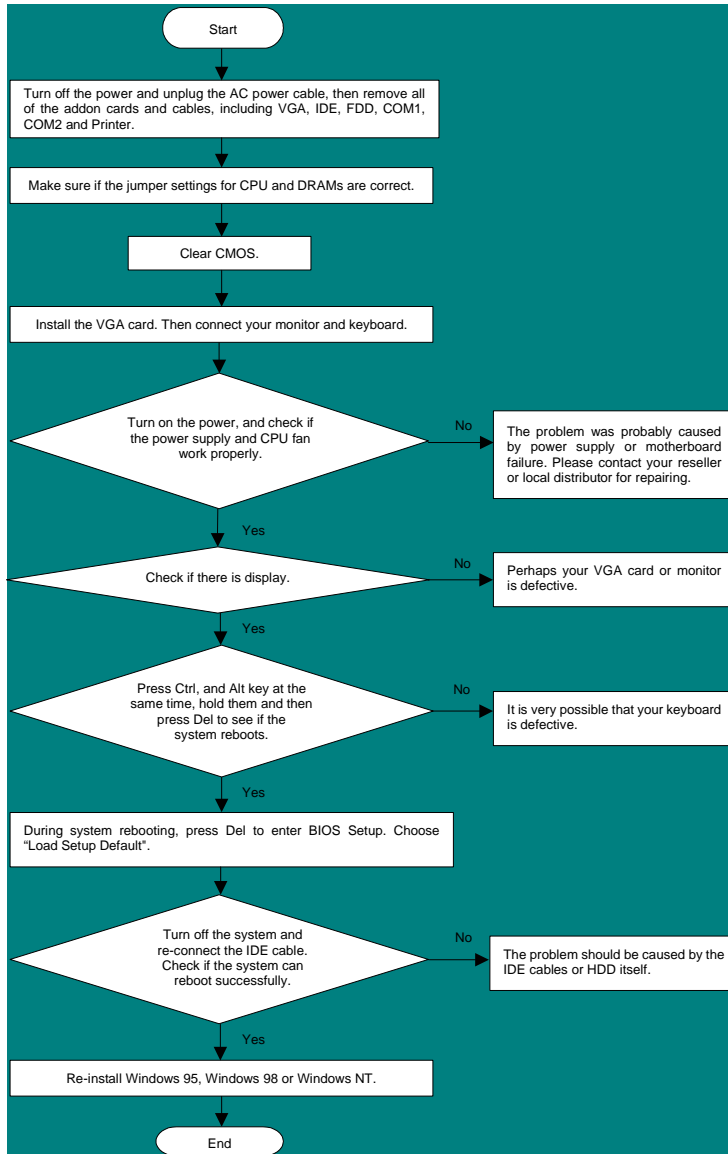
1. Download the new version of BIOS package [zip](#) file from AOpen official web site. (ex: <http://www.aopen.com>)
2. Unzip the download BIOS package (ex: WAX45H8XMAX102.ZIP) with WinZip (<http://www.winzip.com>) in Windows environment.
3. Save the unzipped files into a folder, for example, WAX45H8XMAX102.EXE & WAX45H8XMAX102.BIN.
4. Double click on the WAX45H8XMAX102.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 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.



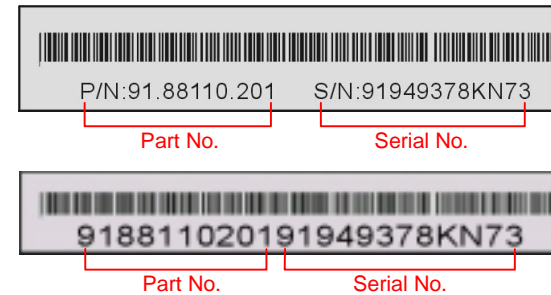
Troubleshooting

If you encounter any trouble while booting your system, follow the procedures accordingly to resolve the problem.



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 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:



AX45H-8X Max 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 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!

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Web Site: <http://www.aopen.com.tw>

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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: Please check the manual carefully and make sure the jumper settings and installation procedure are correct. You can also find the manual and EIG in AOpen Bonus Pack.

<http://english.aopen.com.tw/tech/download/manual/default.htm>

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 be able to find a solution to your problem.

<http://club.aopen.com.tw/faq/>

4

Download Software: Check out this table to get the latest updated BIOS/utility and drivers. In most case, newer versions of drivers and BIOS have solved earlier bugs or compatibility problems.

<http://english.aopen.com.tw/tech/download/default.htm>

5

eForum: We welcome you to join AOpen eForum to discuss our products with other users. Your problem probably had been discussed before or will be answered by other power users here.

<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.