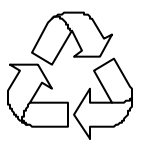
AW540 Series Audio Card

User's Guide



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FCC Class B Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/television technician for help.

Notice 1:

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2:

Shielded interface cables must be used in order to comply with the emission limits.

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1.1 Features

AOpen ***AW540 Series(AW540S-L, AW540, AW540 DELUXE..)*** with ForteMedia FM801-AU sound chip inside is an advanced audio controller for the PCI Bus. It is compatible with Microsoft Windows, Microsoft DirectX and Thousands of games to provide highest hardware compatibility for numerous PC games environment.

AW540 Series with **Yamaha SoftwareSynthesizer S-YXG50** allows Software Driver to support 676 instruments Sondius-XG Capital Synthesizer. The PCI audio engine converts the sampling rate of each audio stream and the streams are mixed without utilizing the CPU or causing system latency. Its also supports DirectSound , Downloadable Sound (DLS) and DirectMusic.

Legacy audio block supports FM Synthesizer, Sound Blaster Pro, MPU401 UART mode and Joystick function in order to provide hardware compatibility on the PCI. In addition, ***AW540 Series*** supports consumer ICE958, Audio Digital Interface(S/PDIF, excluded AW540-L), to connect external audio equipment by digital.

AW540 Series audio card has the following features:

Advanced technology support

- PCI 2.2 Compliant
- True Full Duplex Playback and Capture with Different Sampling Rate
- Support 676 instruments Sondius-XG Capital Synthesizer including GM compatibility
- Q3D positional audio with EAX technology support
- DirectSound support
- Downloadable Sound (DLS) level-1

?? FM Synthesizer

?? Hardware Sound Blaster Pro compatibility

?? Supports Consumer IEC958 Output (S/PDIF OUT) (excluded AW540-L)

?? Supports Consumer IEC958 Input (CD Digital IN) (excluded AW540-L)

?? Supports External Optical/Coaxial S/PDIF IN Connector(For ***AW540 DELUXE*** only)

Software-controllable audio

?? Supports various audio devices all controllable through software

?? Adjusts master volume, CD audio, line-in, and microphone inputs

3D Surround Enhancement

?? Adjusts AC97 CODEC to enhance 3D Surround effect

Driver Support

?? Microsoft Windows 95/98/Me VXD driver

?? Microsoft Windows NT 4.0

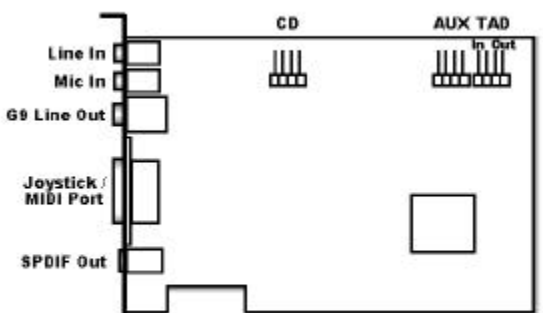
?? Microsoft Windows 2000 driver

?? MS-DOS

1.2 Components and Connecting

1.2.1 Components

AW540



1.2.2 Connecting Peripherals

To fully utilize the card functions, it supports various ways to connect ***AW540 Series*** to peripheral devices. Figure 1.2 shows the different devices that you can connect to the sound card.

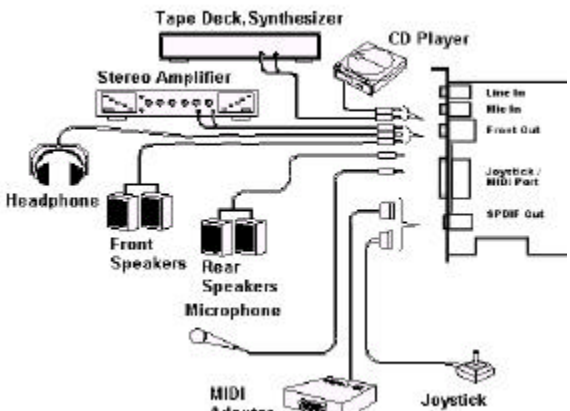


Figure 1.2 Connecting Peripheral Devices

Audio Card Output Devices

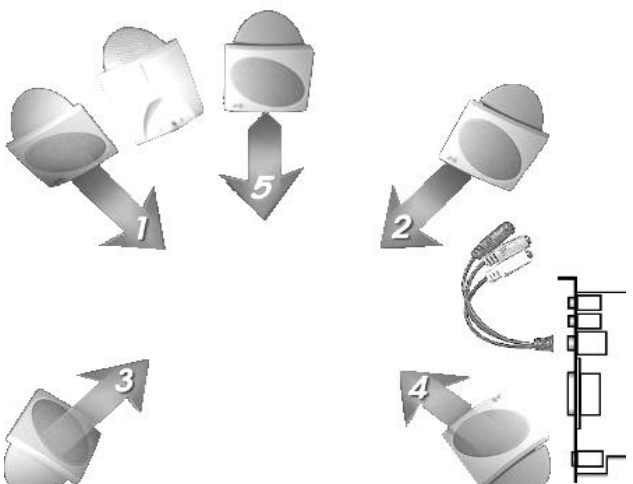
1. Front Out
2. Rear Out
3. Center/Subwoofer
4. S/PDIF Out
5. Game/MIDI Port

Audio Card Input Devices

1. Line In
2. Microphone In
3. CD In
4. Auxiliary In
5. TAD In

1.2.2.1 Audio Card Output Devices

AW540 supplies 2 analog output jacks (Front/Rear) that can maximum connect four speakers to the sound card at the time. We illustrate three common connection types and display them below.



Type I

Connect audio card to general stereo speaker.

Type II

Connect audio card to 2 sets of stereo speakers.

Type III

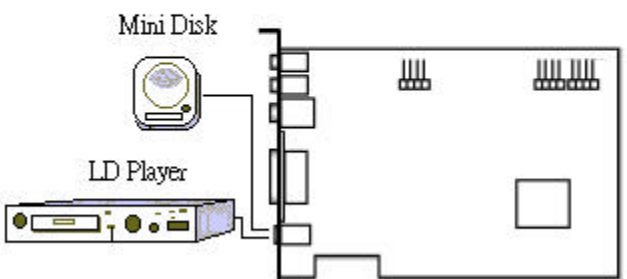
Connect audio card to 5.1 speakers.

NOTE:

AW540 supports WAVE, MIDI, games which support Microsoft DirectSound or QSound Positional 3D Technology for maximum 6 channels output.

1.2.2.2 Audio Card S/PDIF Out Devices

AW540 with the capabilities to process digital signals (compliant with IEC958).



S/PDIF Out Connector

The S/PDIF-Out port is available for Mini Disk, LD player, set-top box etc. and support 48KHz sample rate digital signal.

1.2.2.3 Audio Card Input Devices

To connect your output peripherals (Speakers) to PC, AW540 supports variously connection types to output devices, you can use your card to do the following:

G9 Cable (Figure 2.2.2) provided together wth AW540 product packages transforms output signals from Digital DIN to three separated mini stereo phone jacks (labeled ***FR/FL, RR/RL, SUB/CEN***) supports up to 6 channels output.

Different jacks are connected to different output device.
***FR/FL* Jack :** Connected to Front Right/Left Speaker.
***RR/RL* Jack :** Connected to Rear Right/Left Speaker.
***SUB/CEN* Jack :** Connected to Center and Subwoofer Speaker.

1.2.2.4 Audio Card MIDI/Joystick Devices

The Game/MIDI port on the card is compatible with the standard PC joystick. You may also choose to connect a MIDI adapter with a joystick port to use the MIDI and joystick simultaneously.

1.2.2.5 System Requirements

- IBM PC or compatible
- 166MHz CPU or better processor
- Minimum 32 MB Memory
- Minimum 10MB hard disk space available
- Free PCI slot
- 2 available IRQs
- CD-ROM with 24X or above

2.1 Hardware Installation

NOTE:

Please check the appearance of the audio card before you are starting below steps of hardware installation, If there is any damage appeared, return it to the store for exchange.

1. Turn off the PC and all external peripherals connected to it (e.g. printer…etc.), remove the PC system cover.
2. Locate an empty PCI expansion slot.. Remove the metal bracket corresponding to the slot you have chosen. Save the screw.

   PCI expansion slots can be identified by its approximate length of 3¼. Please read MainBoard manual for reference also.
3. Align AW540 to the expansion slot. Hold it by its edges, and without using excessive force or pressing any components on the sound card, insert AW540 into the slot. Make sure that it is seated firmly and completely in the slot.
4. Secure AW540 to the expansion slot. Align the notch in the mounting bracket of the sound card with the screw hole in the rear panel of the computer case. Use the screw that you removed from the metal bracket to secure the sound card in place.
5. Connect the required cables to the sound card –
   A. Connect your speaker cable to the line- out external Line out jack.
   B. Locate the CD ROM audio connector to **CD-IN** connector on the PCI sound card.
6. Replace the system cover. You are now ready to boot up your PC system.
7. Proceed to the next section, Software Driver Installation, to install AW540 driver.

2.2 Software Installation

2.2.1 Setting Up In Windows 95/98/Me

NOTE:

Although there are many types of setup procedures available when install driver for Windows 95, 98, Me, NT, or 2000, but we strongly recommend you to install sound card driver by selecting AOpen **CD Auto-Run**

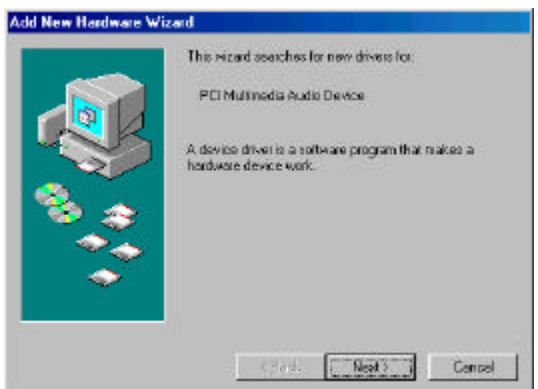
The Microsoft Windows9x, Me, NT or 2000 **OS disc might be needed** when installing driver for you sound card. So please keep ready before proceeding with all hardware and software installation.

During the driver installation procedures, a warning dialog '**Digital Signature Not Found**' windows might display if the driver you choose is not the **Microsoft WHQL** certified one, Anyway, please click the **Yes** button to continue the installation procedures.

CD Auto-Run Setup

1. After had properly finished the Hardware Installation procedures, please power on the PC.

When Windows95/98/Me finds the PCI Multimedia Audio Device, push the ***ESC*** button to cancel the Hardware Installation screens utility and enter windows. This is so you can use our Auto-Run Setup.

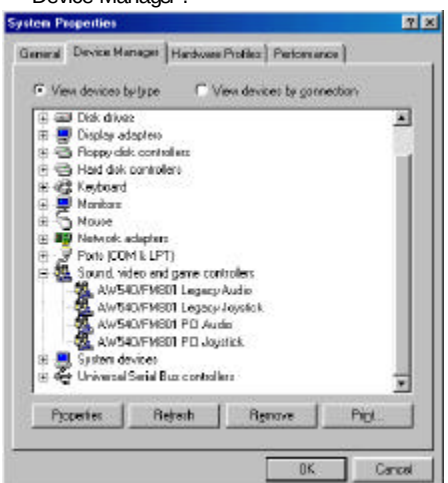


Insert the ***AW540 Series*** driver disk in the appropriate drive. The ***Win95/98/Me Setup Menu*** wizard displays.

Move mouse to the ' Driver' button, select ' Install Driver' item, then click the button to begin auto driver installation procedures.

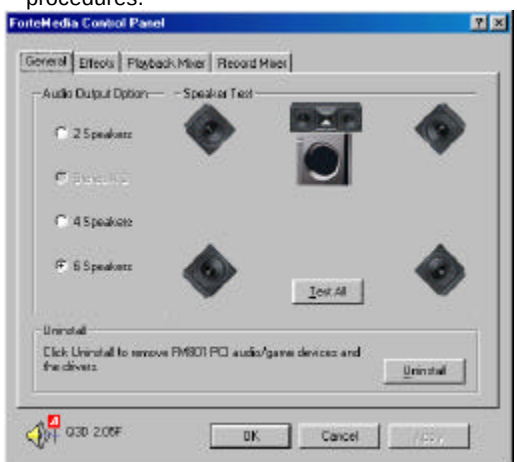
AW540 Driver Auto-Run setup display, push the '**Begin Install**' button, then restart the system. all driver installation procedures will automatic execute and be finished.

After finish all installation procedures, system makes changes and adds 3 components in ' Device Manager' .



Setting up the Real Speakers

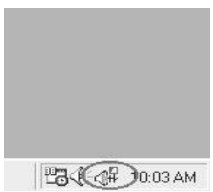
AOpen provides a Speaker-Location program, please exec when you finished the driver installation procedures.



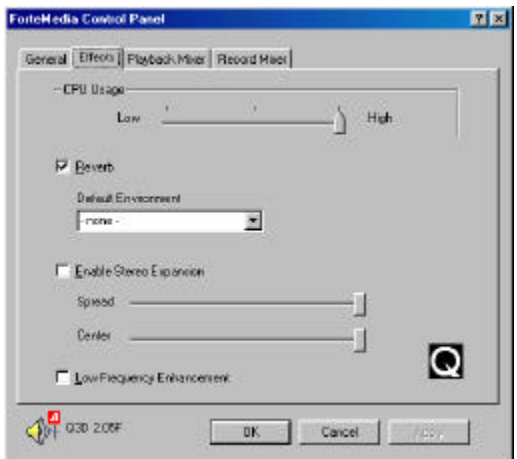
Click the speaker image to check if the real-speakers have place to right location.

Magnificent AW540 Utilities

AOpen collects much sound utilities and setting up tool into its management assistant.



Setting up QSound Effects



allows users to configure the settings. CPU Usage is a three-position slider that combines the effects of Elevation and Sample Rate Conversion(SRC). Low CPU Usage results as both SRC and Elevation at off mode. Turning both SRC and Elevation On will result high CPU usage. The center position of CPU usage slider is an indication of turning SRC on while Elevation mode is set at off.

2.2.2 Setting Up In Windows NT40

NOTE:

Although there are many types of setup procedures available when install driver for Windows 95, 98, Me, NT, or 2000, but we strongly recommend you to install sound card driver by selecting AOpen **CD Auto-Run**

The Microsoft Windows9x, Me, NT or 2000 **OS disc might be needed** when installing driver for you sound card. So please keep ready before proceeding with all hardware and software installation.

During the driver installation procedures, a warning dialog '**Digital Signature Not Found**' windows might display if the driver you choose is not the **Microsoft WHQL** certified one, Anyway, please click the **Yes** button to continue the installation procedures.

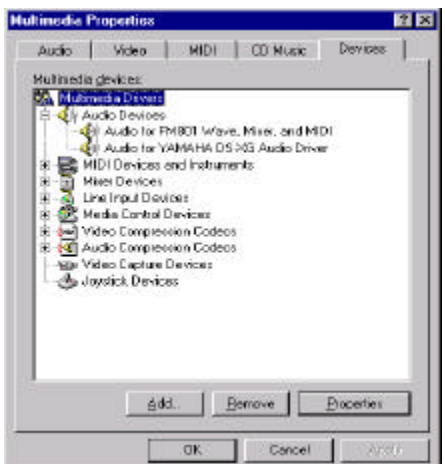
CD Auto-Run Setup

1. After had properly finished the Hardware Installation procedures, please power on the PC.

Insert the ***AW540 Series*** driver disk in the appropriate drive. The ***WinNT Setup Menu*** wizard displays.

Move mouse to the ' Driver' button, select ' Install Driver' item, then click the button to begin auto driver installation procedures.

After finish all installation procedures, system makes changes and adds components in ' Multimedia Properties' .



2.2.1.2 Install MPU-401/Joystick Driver

Follow these steps to install the MPU401 or joystick drivers:

1. Select MULTIMEDIA from control panel and click on the Devices tab.
2. Press the ADD button. Select MPU-401 Compatible Driver /Microsoft Sidewinder 3D Pro Joystick and press OK.
3. Place your NT4.0 installation CD and press OK (the default path is the i386 directory).
4. The Generic MPU-401/Joystick Setup dialog box will pop up. Select the default configuration resource and press OK.
5. Click on the Restart Now button.

2.2.3 Setting Up In Windows 2000

NOTE:

Although there are many types of setup procedures available when install driver for Windows 95, 98, Me, NT, or 2000, but we strongly recommend you to install sound card driver by selecting AOpen **CD Auto-Run**

The Microsoft Windows9x, Me, NT or 2000 **OS disc might be needed** when installing driver for you sound card. So please keep ready before proceeding with all hardware and software installation.

During the driver installation procedures, a warning dialog '**Digital Signature Not Found**' windows might display if the driver you choose is not the **Microsoft WHQL** certified one, Anyway, please click the **Yes** button to continue the installation procedures.

CD Auto-Run Setup

2. After had properly finished the Hardware Installation procedures, please power on the PC.

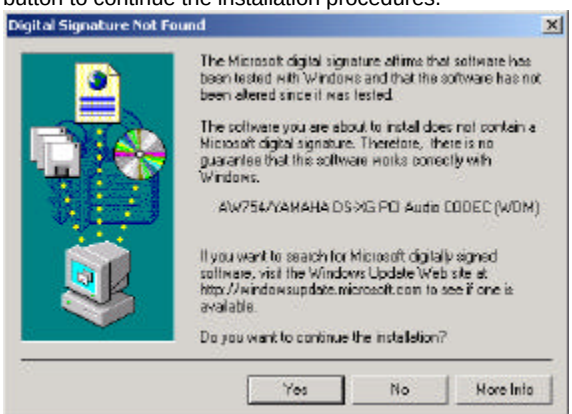
Insert the ***AW540 Series*** driver disk in the appropriate drive. The ***Win2000 Setup Menu*** wizard displays.

Move mouse to the **Driver** button, select '**Install/Upgrade**' item, then click **Driver** button to begin auto driver installation procedures.

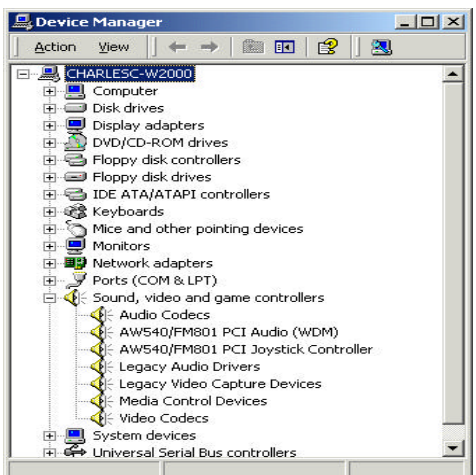
AW540 Windows2000 Driver Setup program will display, please push **Begin Install** button to continue.

Restart the system to finish all installation procedures.

During the driver installation procedures, a warning dialog '**Digital Signature Not Found**' windows might display if the driver you choose is not the **Microsoft WHQL** certified one, Anyway, please click the **Yes** button to continue the installation procedures.



After finish all installation procedures, system makes change and adds components in ' Device Manager' .



3. Applications

AOpen provides the overall application-driven capacity in music listening, player for WAVE, MIDI, CD, MP3 and driver auto-upgrade service application, etc..

Insert the ***AW540 Series*** driver disk in the appropriate drive. The ***AOpen2000 Setup Menu*** wizard displays. Move mouse to the **Application** button, select any one and click the button to begin installation.

AOpen Drivers Live Update Wizard

Trying to get new feature and update driver but all things need by yourself with vexation?

AOpen Drivers Live Update Wizard program

-Auto-Diagnose your system.

-Direct Web Auto-Service Connection.

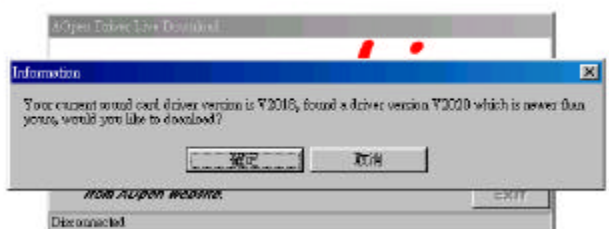
-Auto-detect and download latest driver.

-Auto-Update your system after downloaded driver.

Now you only need 'ONE BUTTON CLICK'!

After you clicked the **Upgrade** button, it automatically detect your system configuration and auto link to AOpen web to check if any latest information and driver had been released.

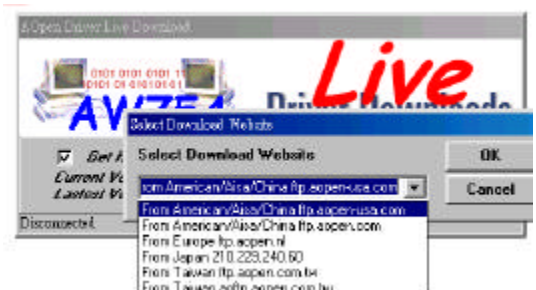
An ' information' dialog will display, if found..



You can select any download site near you and beginning download new drivers.

NOTE:

Sometimes the download site you choose might be not accessed, please try later or select another one.



After all download procedures had finished, an auto update dialog display, Click **Yes** button to upgrade your system at once.

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AOpen Digital CD Player

AOpen Digital CD Player grabs the truly digital CD audio data from CD-ROM direct to audio DSP without any **DA** or **AD** procedures. It provides.

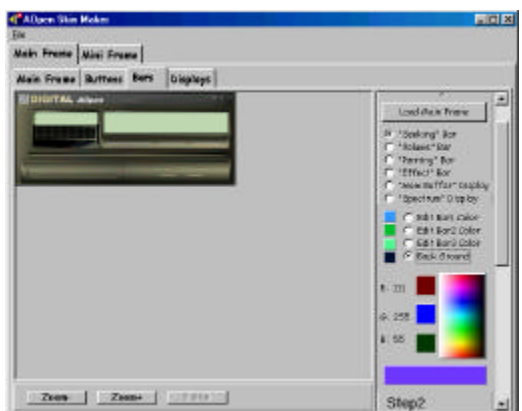
-Truly Digital audio data.

-20 kinds of built-in sound effects.

-Player skin changeable. Provides 4 kinds of built-in skins

Skin Maker

An utility for users to build their own style skin. It is bundled together with **Digital CD Player.**



WinRip- MP3 Player/Encoder/Ripper
Operation System: Win95/98/Me/NT4/2000
Technical Feature:
-Support CD,MP1, MP2, MP3 etc. audio formats.
-Ability to record audio sources to MP3, WAVE, CD.
-Processional DSP Sound Effects including Hall, Vocal, Rock, Soft, Bass, Surround etc.

AOpen Music Center
Operation System: Win95/98/Me/NT4/2000
Technical Feature:
-Support CD, WAVE, MIDI . audio formats.
-Ability to record audio sources to WAVE, WMA.

4. 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

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

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 latest updated utilities 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 efficiently than us. After all, their attitude of service is an 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**, **system configuration** and **driver version** are also very helpful.

Web: ***http://www.aopen.com***

Email : Send us email by going through the contact form below.
English ***http://www.aopen.com.tw/tech/contact/techusa.htm***
Japanese ***http://aojp.aopen.com.tw/tech/contact/techjp.htm***
Chinese ***http://w3.aopen.com.tw/tech/contact/techtw.htm***
German ***http://www.aopencom.de/tech/contact/techde.htm***
Simplified Chinese
http://www.aopen.com.cn/tech/contact/techcn.htm

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