



Your Reliable Partner

ABIT RADEON Series

(R9800XT, R9600XT-VIO, R9600, R9600SE)

3D Graphics Card User's Manual

4200-0401-03

Rev. 1.10

Copyright and Warranty Notice

The information in this document is subject to change without notice and does not represent a commitment on part of the vendor, who assumes no liability or responsibility for any errors that may appear in this manual.

No warranty or representation, either expressed or implied, is made with respect to the quality, accuracy or fitness for any particular part of this document. In no event shall the manufacturer be liable for direct, indirect, special, incidental or consequential damages arising from any defect or error in this manual or product.

Product names appearing in this manual are for identification purpose only and trademarks and product names or brand names appearing in this document are property of their respective owners.

This document contains materials protected under International Copyright Laws. All rights reserved. No part of this manual may be reproduced, transmitted or transcribed without the expressed written permission of the manufacturer and authors of this manual.

If you do not properly set the Graphics Accelerator settings causing the motherboard to malfunction or fail, we cannot guarantee any responsibility.

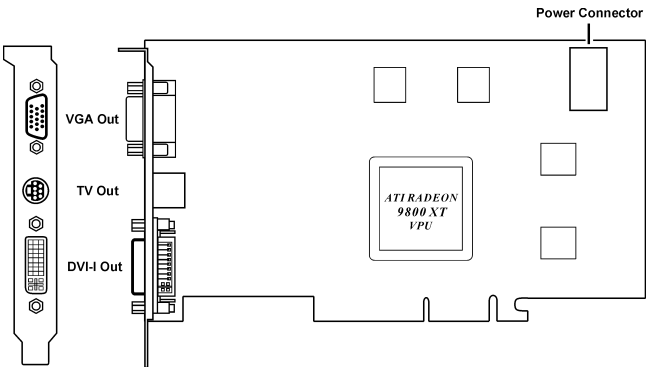
Table Of Contents

CHAPTER 1. INTRODUCTION	1-1
1-1. R9800XT	1-1
1-2. R9600XT-VIO	1-4
1-3. R9600/R9600SE	1-6
CHAPTER 2. HARDWARE SETUP	2-1
2-1. CARD INSTALLATION	2-1
New Systems:	2-1
Systems with Existing VGA Card:	2-1
2-2. DEVICES CONNECTION	2-2
2-3. CONNECTING TO COMPUTER'S POWER SUPPLY	2-3
2-4. CHANGING NTSC/PAL SETTING.....	2-4
For R9600XT-VIO/R9600/R9600SE:	2-4
For R9800XT:	2-4
CHAPTER 3. DRIVER INSTALLATION.....	3-1
CHAPTER 4. DISPLAY PROPERTIES	4-1
4-1. SETTINGS	4-1
4-2. GENERAL	4-2
4-3. ADAPTER	4-3
4-4. MONITOR	4-3
4-5. TROUBLESHOOT	4-4
4-6. COLOR MANAGEMENT.....	4-4
4-7. DISPLAYS	4-5
Attributes:	4-5
Adjustments:	4-6
Advanced:	4-6
4-8. COLOR	4-7
4-9. OPTIONS	4-9
4-10. OVERLAY	4-10
Clone Mode Options:	4-11

4-11.	3D CONTROL PANEL.....	4-12
	Custom settings for Direct3D/OpenGL:.....	4-13
	SMARTSHADER[tm] Effects:.....	4-14
4-12.	SMARTGART[tm]	4-15
4-13.	VPU RECOVER	4-16
4-14.	OVERDRIVE[tm].....	4-16
CHAPTER 5.	HYDRAVISION™	5-1
	Accessing HYDRAVISION:.....	5-1
	MultiDesk:	5-2
<i>APPENDIX A.</i>	<i>Install PowerDVD.....</i>	<i>A-1</i>
<i>APPENDIX B.</i>	<i>Install DirectX.....</i>	<i>B-1</i>
<i>APPENDIX C.</i>	<i>BIOS Flashing Utility.....</i>	<i>C-1</i>
<i>APPENDIX D.</i>	<i>How to Get Technical Support</i>	<i>D-1</i>

Chapter 1. Introduction

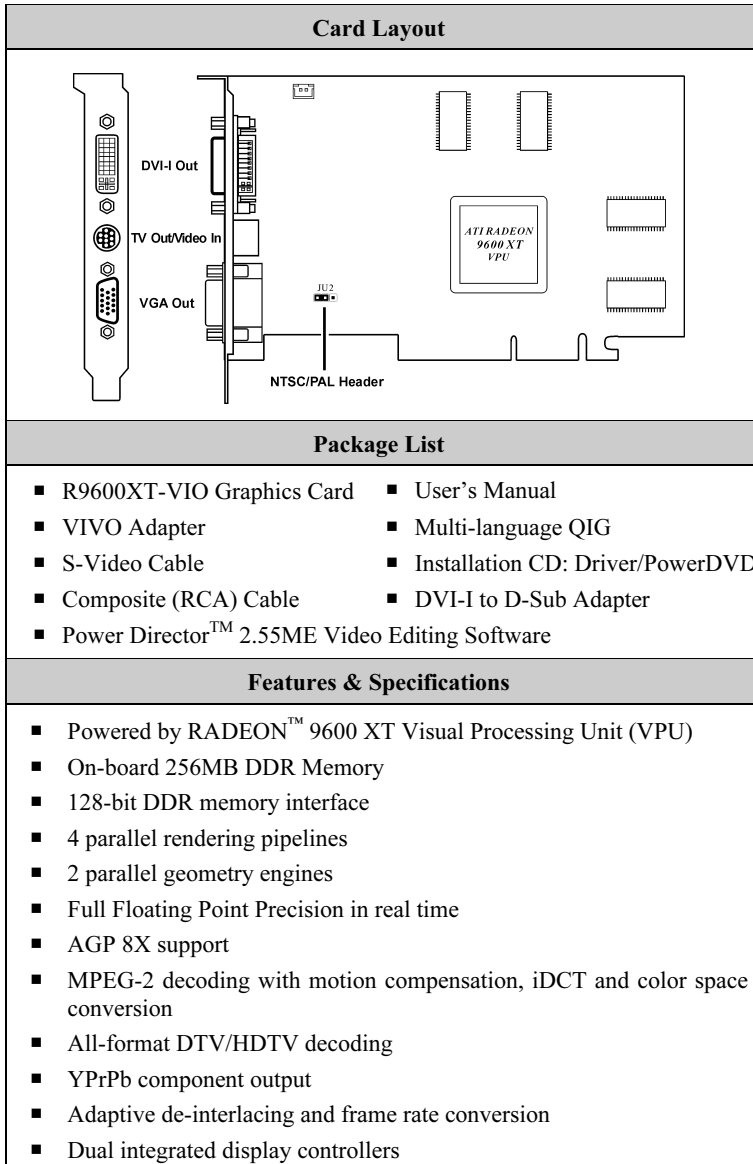
1-1. R9800XT

Card Layout	
 <p>The diagram shows the layout of the R9800XT graphics card. On the left side, there are four ports: VGA Out, TV Out, and DVI-I Out. On the right side, there is a Power Connector. The central part of the card features a square chip labeled 'ATIRADEON 9800XT VPU'. There are also several smaller rectangular components on the card.</p>	
Package List	
<ul style="list-style-type: none">▪ R9800XT Graphics Card▪ S-AV Adapter▪ S-Video Cable▪ Composite (RCA) Cable▪ DVI-I to D-Sub Adapter	<ul style="list-style-type: none">▪ Power Extension Cable▪ User's Manual▪ Multi-language QIG▪ Installation CD: Driver/PowerDVD▪ Half-life2 free download coupon
Features & Specifications	
<ul style="list-style-type: none">▪ Powered by RADEON™ 9800 XT Visual Processing Unit (VPU)▪ On-board 256MB DDR Memory▪ 256-bit DDR memory interface▪ 8 parallel rendering pipelines▪ 4 parallel geometry engines▪ Full Floating Point Precision in real time▪ AGP 8X support▪ MPEG-2 decoding with motion compensation, iDCT and color space conversion	

- All-format DTV/HDTV decoding
- YPrPb component output
- Adaptive de-interlacing and frame rate conversion
- Dual integrated display controllers
- Dual integrated 10-bit per channel 400 MHz DACs
- Integrated 165 MHz TMDS transmitter (DVI 1.0 compliant and HDCP ready)
- Integrated TV Output support up to 1024x768 resolution
- SMARTSHADER™ 2.1
 - Full support for Microsoft® DirectX® 9.0 programmable vertex and pixel shaders in hardware
 - 2.0 Vertex Shaders support vertex programs up to 65,280 instructions with flow control
 - 2.0 Pixel Shaders support up to 16 textures per rendering pass
 - New F-buffer technology supports pixel shader programs with unlimited instructions
 - 128-bit, 64-bit & 32-bit per pixel floating point color formats
 - Multiple Render Target (MRT) support
 - Shadow volume rendering acceleration
 - Complete feature set also supported in OpenGL® via extensions
- SMOOTHVISION™ 2.1
 - 2x/4x/6x full scene anti-aliasing modes
 - Adaptive algorithm with programmable sample patterns
 - 2x/4x/8x/16x anisotropic filtering modes
 - Adaptive algorithm with bi-linear (performance) and tri-linear (quality) options
- HYPER Z™ III+
 - 3-level Hierarchical Z-Buffer with early Z test
 - Lossless Z-Buffer compression (up to 24:1)
 - Fast Z-Buffer Clear
 - Z cache optimized for real-time shadow rendering
- TRUFORM™ 2.0
 - 2nd generation N-Patch higher order surface support
 - Discrete and continuous tessellation levels per polygon
 - Displacement mapping

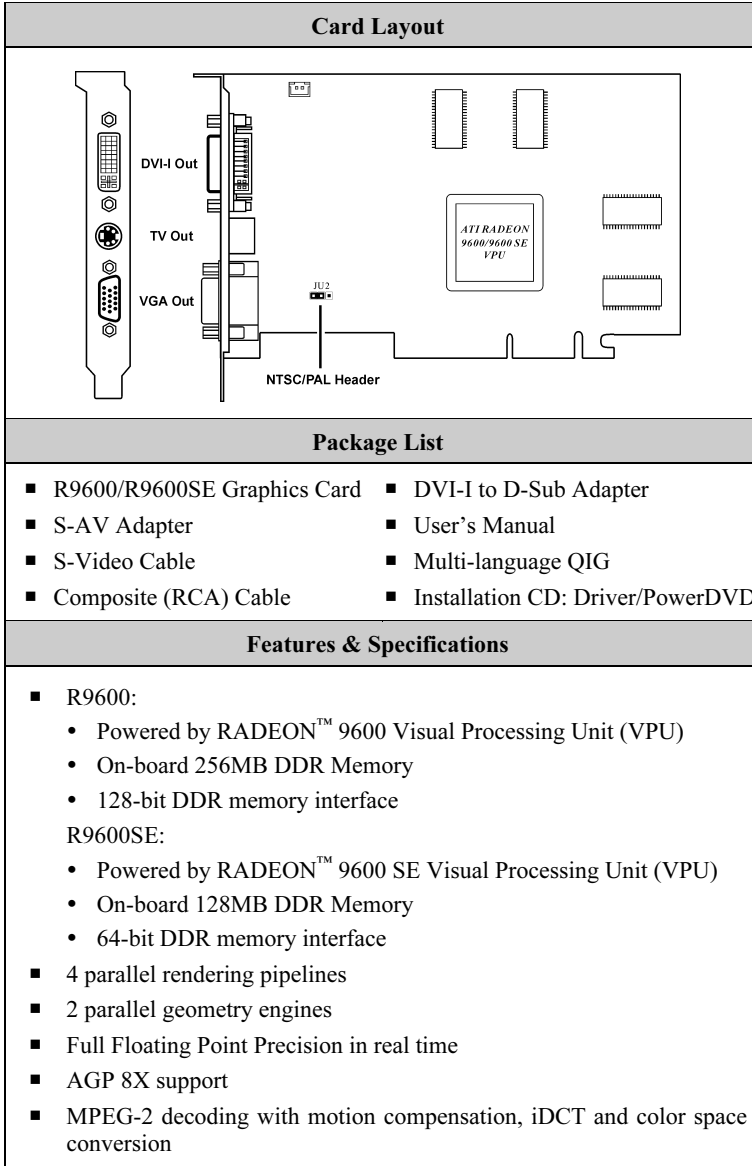
- VIDEOSHADER™
 - Seamless integration of pixel shaders with video
 - FULLSTREAM™ video de-blocking technology
 - Noise removal filtering for captured video
- Operating Systems Support: Windows® XP/2000/Me
- System Requirements
 - Recommends a 300-Watt power supply
 - Intel® Pentium® 4, AMD® Athlon® or higher with AGP 8X (0.8v), 4X (1.5V) bus
 - 128MB of system memory
 - Installation software requires CD/DVD ROM drive

1-2. R9600XT-VIO



- Dual integrated 10-bit per channel 400 MHz DACs
- Integrated 165 MHz TMDS transmitter (DVI 1.0 compliant and HDCP ready)
- Integrated TV Output support up to 1024x768 resolution
- Video Input supports up to 800x600 resolution
- Optimized for Pentium® 4 SSE2 and AMD Athlon™ 3DNow!
- SMARTSHADER™ 2.0
 - Programmable pixel and vertex shaders
 - 16 textures per pass
 - Pixel shaders up to 160 instructions with 128-bit floating point precision
 - Vertex shaders up to 1024 instructions with flow control
 - Multiple render target support
 - Shadow volume rendering acceleration
 - High precision 10-bit per channel frame buffer support
 - Supports DirectX® 9.0 and the latest version of OpenGL®
- SMOOTHVISION™ 2.1
 - 2x/4x/6x full scene anti-aliasing modes
 - Adaptive algorithm with programmable sample patterns
 - 2x/4x/8x/16x anisotropic filtering modes
 - Adaptive algorithm with bi-linear (performance) and tri-linear (quality) options
- HYPER Z™ III+
 - Lossless Z-Buffer compression (up to 24:1)
 - Fast Z-Buffer Clear
- TRUFORM™ 2.0
 - 2nd generation N-Patch higher order surface support
 - Discrete and continuous tessellation levels per polygon
 - Displacement mapping
- VIDEOSHADER™
 - Seamless integration of pixel shaders with video
 - FULLSTREAM™ video de-blocking technology
 - Noise removal filtering for captured video
- Operating Systems Support: Windows® XP/2000/Me
- System Requirements
 - Intel® Pentium® 4, AMD® Athlon® or higher with AGP 8X (0.8v), 4X (1.5V) bus
 - 128MB of system memory
 - Installation software requires CD/DVD ROM drive

1-3. R9600/R9600SE



- All-format DTV/HDTV decoding
- YPrPb component output
- Adaptive de-interlacing and frame rate conversion
- Dual integrated display controllers
- Dual integrated 10-bit per channel 400 MHz DACs
- Integrated 165 MHz TMDS transmitter (DVI 1.0 compliant and HDCP ready)
- Integrated TV Output support up to 1024x768 resolution
- Optimized for Pentium® 4 SSE2 and AMD Athlon™ 3DNow!
- SMARTSHADER™ 2.0
 - Programmable pixel and vertex shaders
 - 16 textures per pass
 - Pixel shaders up to 160 instructions with 128-bit floating point precision
 - Vertex shaders up to 1024 instructions with flow control
 - Multiple render target support
 - Shadow volume rendering acceleration
 - High precision 10-bit per channel frame buffer support
 - Supports DirectX® 9.0 and the latest version of OpenGL®
- SMOOTHVISION™ 2.1
 - 2x/4x/6x full scene anti-aliasing modes
 - Adaptive algorithm with programmable sample patterns
 - 2x/4x/8x/16x anisotropic filtering modes
 - Adaptive algorithm with bi-linear (performance) and tri-linear (quality) options
- HYPER Z™ III+
 - Lossless Z-Buffer compression (up to 24:1)
 - Fast Z-Buffer Clear
- TRUFORM™ 2.0
 - 2nd generation N-Patch higher order surface support
 - Discrete and continuous tessellation levels per polygon
 - Displacement mapping
- VIDEOSHADER™
 - Seamless integration of pixel shaders with video
 - FULLSTREAM™ video de-blocking technology
 - Noise removal filtering for captured video

- Operating Systems Support: Windows® XP/2000/Me
- System Requirements
 - Intel® Pentium® 4, AMD® Athlon® or higher with AGP 8X (0.8v), 4X (1.5V) bus
 - 128MB of system memory
 - Installation software requires CD/DVD ROM drive

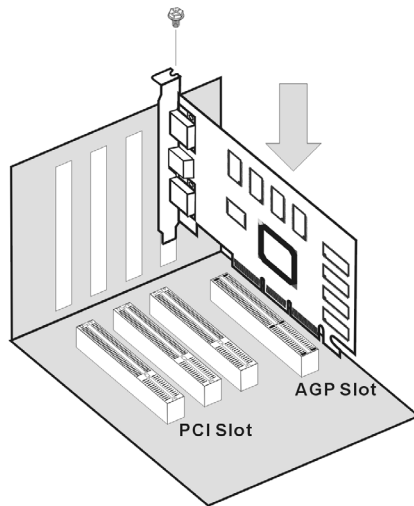
Chapter 2. Hardware Setup

2-1. Card Installation

This graphics card can only be installed in a motherboard with AGP slot. Please handle this card with care and make sure to unplug the power supply of your system before installation.

New Systems:

1. Unplug all power cords of your computer.
2. Remove computer chassis cover.
3. Locate the AGP slot on your motherboard.
4. Remove the metal bracket corresponding to the AGP slot. Keep the screw.
5. Align this card to the AGP slot. Hold the card's edges and insert it into the slot without using excessive force or pressing any components on the card. Make sure it is firmly and completely fixed into the slot.
6. Secure this card's mounting bracket to the back panel of computer chassis with the screw removed from the metal bracket.
7. Replace the chassis cover.



The layout of the VGA card may vary by models.

Systems with Existing VGA Card:

1. Change the display driver to Standard VGA.
2. Shut down your computer and unplug all power cords.
3. Replace the existing VGA card with this new card.

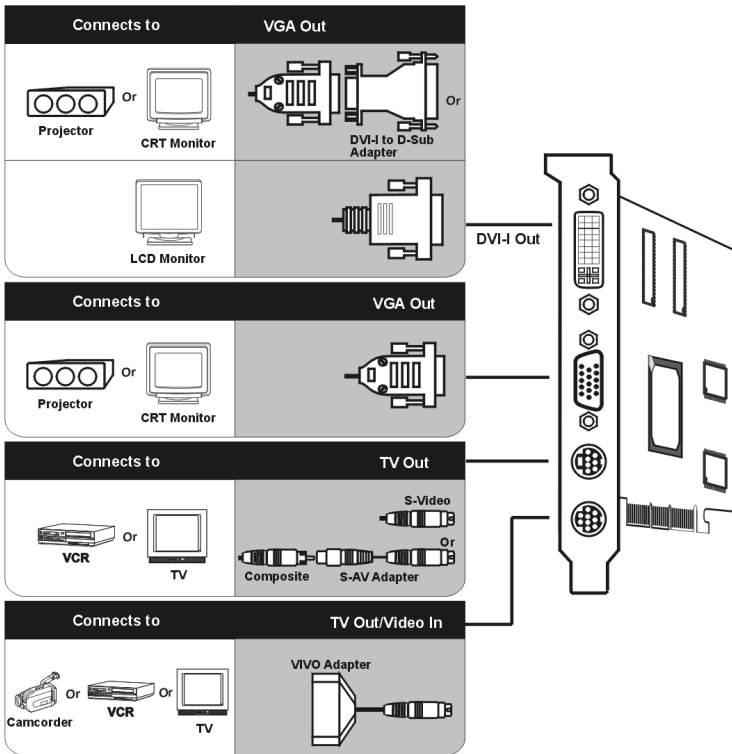
Your graphics card is now installed. Before restarting your computer, connect PC monitor or other display devices to this card (see "Devices Connection").

2-2. Devices Connection



The following illustration shows all possible connector combinations. Your specific Graphics Card may not have all the shown connectors.

4pin/7pin TV-out and 9pin TV-out/Video-in ports are both shown here to illustrate the connections. Your Graphics Card will have one or the other, not both.



NOTE: The 9pin TV-out/Video-in port allows you to output/input the image to/from a TV or video device. This type of connector can be used for either RCA cable or S-Video cable if the optional VIVO adapter is plugged in. Simply plug one end of the RCA cable or S-Video cable into the proper connector provided by the VIVO adapter, and the other end to the video input/output connector on your TV or video device. For the correct connection, please refer to the TV's and video devices' manuals for more information.

2-3. Connecting to computer's power supply

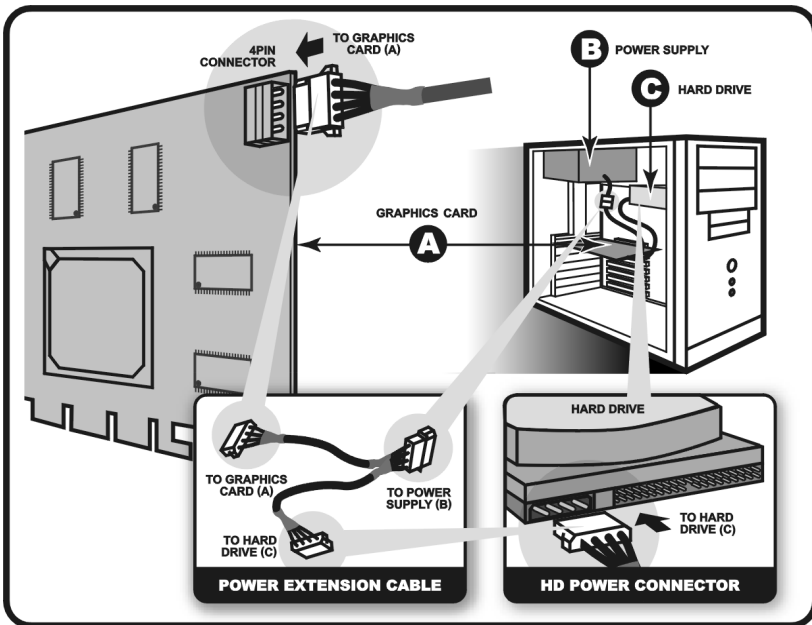


The R9800XT requires connection to your PC's internal power supply for operation. Consult your system builder or OEM to ensure your system has an adequate power supply. Otherwise we recommend a 300-Watt power supply or greater to ensure normal system operation.

Please note that the system will not boot, if the R9800XT is not connected to the power supply.

Find a hard disk drive power cable, and connect it to your graphics card. If there is no available one, use the supplied power extension cable to connect R9800XT to the computer's hard drive power connector. Please follow the instructions shown below.

1. Remove the power cable from the HD power connector.
2. Connect (A) of the power extension cable to your graphics card.
3. Connect (B) to the power supply connector.
4. Connect (C) to the HD power connector.

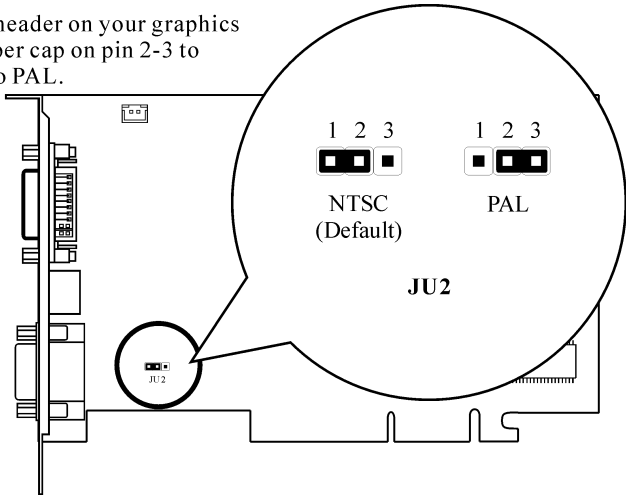


2-4. Changing NTSC/PAL Setting

The RADEON Series Graphics Card provides both NTSC and PAL support. The default setting is NTSC. To change the setting to PAL, please refer to the following illustration and description.

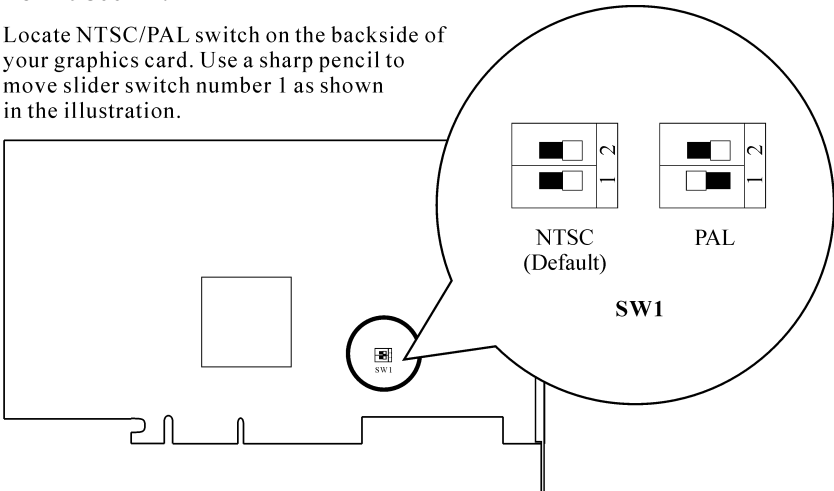
For R9600XT-VIO/R9600/R9600SE:

Locate NTSC/PAL header on your graphics card. Place the jumper cap on pin 2-3 to change the setting to PAL.



For R9800XT:

Locate NTSC/PAL switch on the backside of your graphics card. Use a sharp pencil to move slider switch number 1 as shown in the illustration.

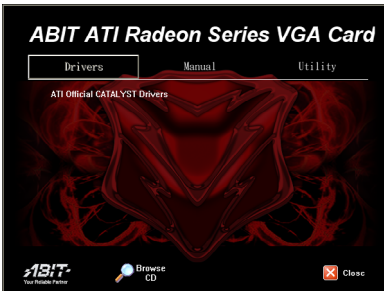


Chapter 3. Driver Installation

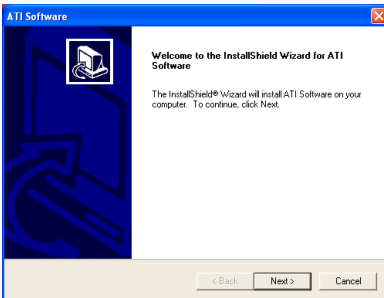
The screen displays in this manual may not exactly reflect the screenshots on your screen. The contents of the Installation CD that came with this card are subject to change at any time without notice. The latest driver for this board is also downloadable from our Web site at <http://www.abit.com.tw>.

The installation procedures and screenshots in this section are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.

Insert the Installation CD into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this CD to enter the installation menu.



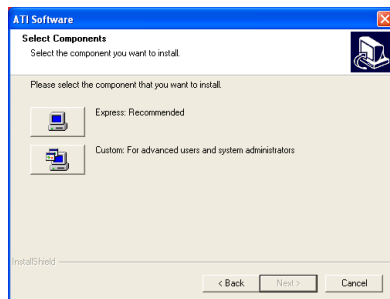
1. After entering the installation menu, move your cursor to [Drivers] tab. Click [ATI Official CATALYST Drivers].



2. The welcome screen appears, click “Next>” to start installation.



3. Click “Yes” to continue.



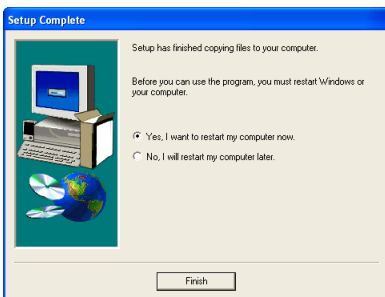
4. Select the component you want to install to enter further installation.



5. Click "Continue Anyway".



6. Click "Continue Anyway".



7. Choose "Yes, I want to restart my computer now", and click "Finish" to complete setup.

Chapter 4. Display Properties

This section provides an explanation of each Display Properties tab.

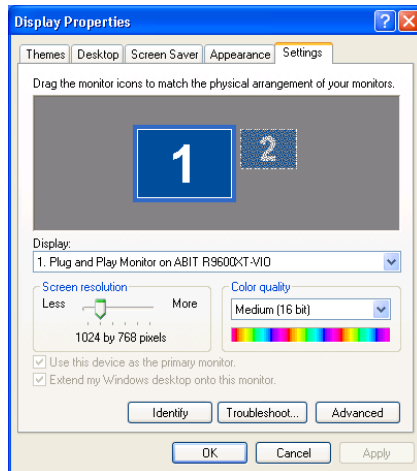
To use the Display Properties, access the Windows® **Control Panel** and then double-click **Display** to enter, or you may right-click the Windows® desktop, click “Properties” → “Settings” → “Advanced” to enter.

NOTE: The screenshots in this section are based on the Windows XP operating system. Features presented in the following pages may not be supported in all operating systems and may appear differently.

4-1. Settings

This tab displays icons that represent your monitors. If more than one icon is displayed, click each one to see the large number in the corresponding monitor. The settings for that monitor appear in Display, Screen resolution, and Color quality.

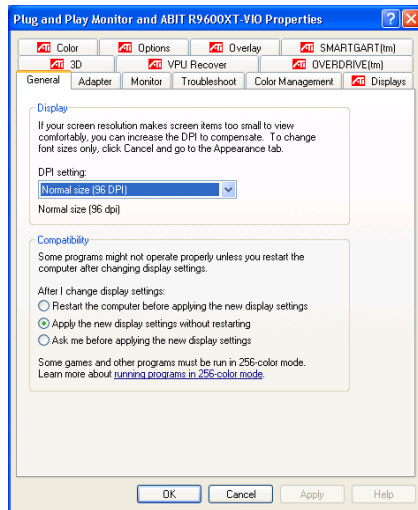
- **Display:** Displays all installed PCI and AGP video adapters. The adapter for your primary monitor is in position 1.
- **Screen resolution:** Displays the current screen resolution settings for the monitor whose video adapter appears in Display. Drag the slider to specify the screen resolution you want. The higher the number of pixels, the more information you can display on your screen.
- **Color quality:** Displays the current color settings for the monitor whose video adapter appears in Display. To use a different color setting, click the arrow, and then click the setting you want.
- **Use this device as the primary monitor:** Select this option to specify that the monitor corresponding to the icon you selected above is the primary monitor. The primary monitor will display the logon dialog box when you start your computer. In addition, most programs will display windows on the primary monitor when you initially open them.



- **Extend my Windows desktop onto this monitor:** Select this option to specify that your desktop will be extended onto the monitor corresponding to the icon you selected above. This check box is unavailable for your primary monitor because additional monitors are all extensions of the primary monitor.
- **Identify:** Click this button to display a number on the monitors that correspond with the icons shown above.
- **Troubleshoot:** Click this button to start the Display Troubleshooter.
- **Advanced:** Click this button to open the Properties dialog box for the video adapter that appears in Display.

4-2. General

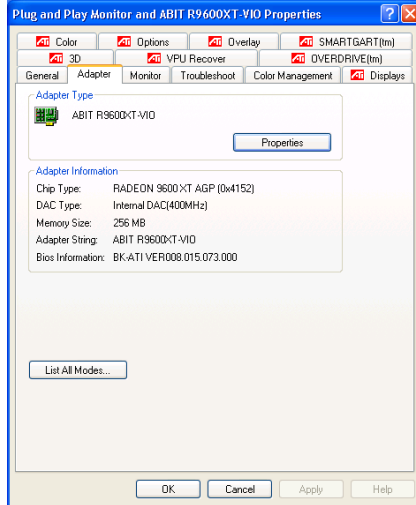
- **DPI setting:** Lists the available DPI (dots per inch) sizes for the selected monitor. Increasing the DPI increases the size of everything on your screen. Decreasing the DPI decreases the size of everything on your screen. To use a different size, click a DPI size in the list or choose **Other**, which allows you to customize the DPI setting for your monitor.
- **Restart the computer before applying the new display settings:** Specifies that you want your computer to restart automatically when you change system display settings.
- **Apply the new display settings without restarting:** Specifies that you want your computer to apply changes to system color settings without restarting. Some programs might not display colors correctly without being restarted after you make changes. To avoid this problem, close the program, change the color settings, and then open the program again.
- **Ask me before applying the new display settings:** Specifies whether Windows should display a prompt to restart every time you change system color settings.



4-3. Adapter

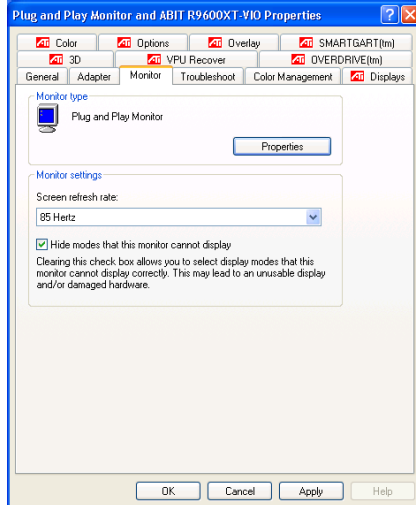
This tab shows what type of display adapter you are currently using.

- **Properties:** Click this button to display device and driver properties for this video adapter.
- **List All Modes:** Click this button to view all of the video modes available for this adapter.



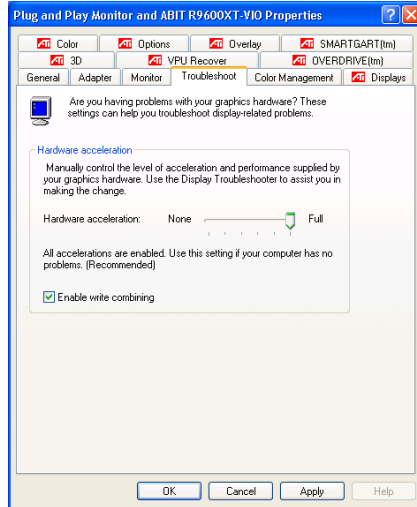
4-4. Monitor

- **Properties:** Click this button to display device and driver properties for this video adapter.
- **Screen refresh rate:** Lists the refresh rates available for the selected monitor listed under **Display** on the **Settings** tab. A higher refresh frequency reduces flicker on your screen.
- **Hide modes that this monitor cannot display:** Specifies whether the list under Refresh Frequency will include modes that are not supported by your monitor. Choosing a mode that is inappropriate for your monitor may cause severe display problems and could damage your hardware. You must be logged on as a member of the Administrator group in order to view unsupported modes.



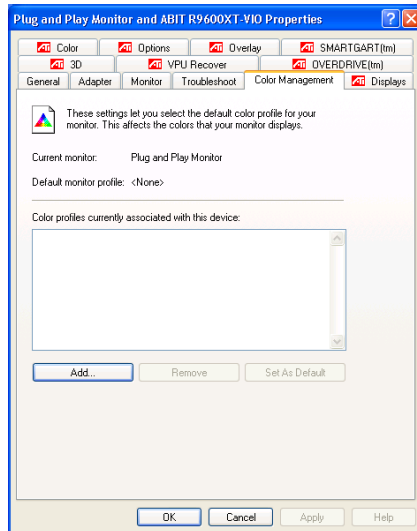
4-5. Troubleshoot

- Hardware acceleration:** Adjusts the levels of hardware acceleration controlled by device drivers. Dragging the slider from **Full** to **None** gradually disables portions of hardware acceleration and enables you to detect which areas might be causing you to have problems with your graphics hardware.
- Enable write combining:** Specifies whether "write combining" is turned on or off. Write combining improves video performance by speeding up the display of information to your screen. However, increased speed can cause screen corruption, so if you experience problems with your display, clear the check box.




4-6. Color Management

This tab lists all the color profiles currently associated with this monitor. Click a profile to make it the active profile. Otherwise, the default profile is the active profile.



4-7. Displays

The Displays tab provides multiple monitor features. Here you can enable/disable display devices and swap the assignment of **Primary** and **Secondary** displays.

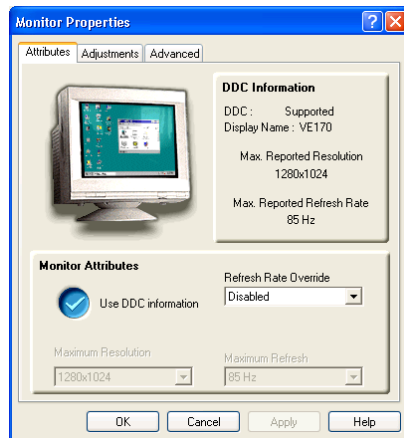
- **Scheme:** Lists all the displays schemes you have saved, as well as several preset schemes.
- **Hotkey:** Displays the hotkey for the current selection in the Scheme list.
- : Click this button to enable/disable the display device. A desktop image appears on the monitor icon when this button is in the “Enable” position.
- **Monitor icon:** Click this to launch the following Monitor Properties Page (if available): Monitor Attributes page, Monitor Adjustment page and Monitor Advanced page.



Attributes:

- **Use DDC information:** Click this button if your monitor is equipped with a Display Data Channel (DDC) – a data channel used by newer monitors to communicate their properties (such as maximum resolution and refresh rate) to the associated video adapter.
- **Maximum Resolution:** Displays the maximum resolution values available for your monitor.
- **Maximum Refresh Rate:** Displays the maximum refresh rate available for your monitor.

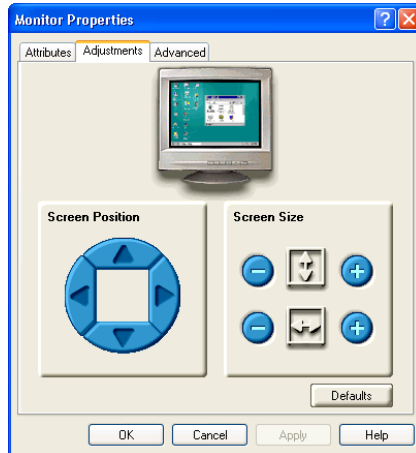
Warning: Consult your monitor user’s manual before adjusting maximum refresh rates. Applying



the wrong maximum refresh rate may seriously damage your monitor.

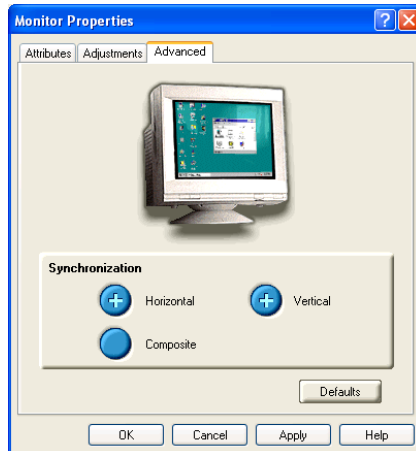
Adjustments:

- Screen Position:** This control panel allows you to position your monitor display. The four arrows under **Screen Position** shift your display left, right, up, or down.
- Screen Size:** This option allows you to adjust the size of your monitor display. The (+) and (-) buttons under **Vertical Screen Size** increase/decrease the vertical size of your display. The (+) and (-) buttons under **Horizontal Screen Size** increase/decrease the horizontal size of your display.



Advanced:

- Synchronization:** This option allows you to adjust the **Horizontal**, **Vertical** and **Composite** synchronization of your monitor. Consult your monitor specifications for the recommended settings.
- Horizontal/Vertical button:** Click this button to adjust horizontal/vertical synchronization of your monitor.
- Composite button:** Placing a check here combines the horizontal and vertical synchronization signals supplied by your graphics card to your monitor.

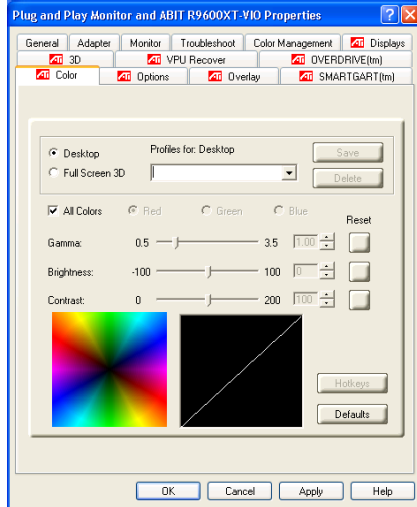


Warning: Composite sync should be checked only if you are using a composite sync monitor. Consult your monitor user's manual for information on your monitor type.

4-8. Color

The Color Properties page allows you to configure Gamma, Brightness, and Contrast color settings for both your desktop and full screen 3D environments. You can also save settings to a color Profile for easy recall later. In addition, you can assign unique hotkey combinations that allow you to adjust Gamma, Brightness, and Contrast color settings within your full screen 3D applications.

- **Desktop radio button:** Select **Desktop** to configure your desktop color settings.
- **Full Screen 3D radio button:** Select **Full Screen 3D** to configure the color settings for your 3D application. Note that the configured settings will only be apparent within a full screen 3D application environment.
- **Profiles for:** Indicates whether the profile in current use is for your Desktop or a Full Screen 3D environment.
- **Profiles dropdown list:** Lists all of the Desktop or Full Screen 3D profiles that you have saved. Selecting a profile from the list loads those custom color settings for either your Desktop or your full screen 3D application (depending on the state of the radio buttons). To create a new profile, simply type in a name and click **Save**.
- **Save:** Click this button to save your current color settings to a Desktop or Full Screen 3D profile, using the name you specified in the list box. To restore these settings later, simply select the Profile name from the list and click **Apply** or **OK**.
- **Delete:** Deletes the profile that is selected in the Profiles list box.
- **All Colors checkbox:** Check this box to adjust the Gamma, Brightness or Contrast for Red, Green, and Blue simultaneously. Note that any individual color settings made are lost if **All Colors** is selected, and the color settings revert back to the previous All Colors settings.
- **Red/Green/Blue radio buttons:** Adjusts the **Gamma, Brightness or Contrast** only for the selected color component (Red, Green, or Blue). Note that any individual color settings made are lost if you select **All Colors** again.

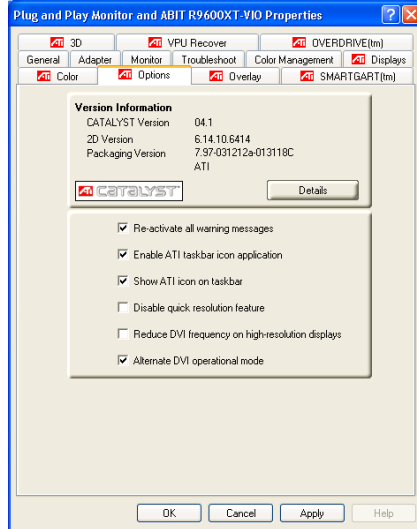


- **Gamma slider:** Increases or decreases the gamma correction of your Desktop or full screen 3D application. Changing the gamma alters the curvature of the color curve.
- **Brightness slider:** Increases or decreases the color brightness of your Desktop or full screen 3D application. Changing the brightness adjusts the vertical position of the color curve.
- **Contrast slider:** Increases or decreases the color contrast of your Desktop or full screen 3D application. Changing the contrast adjusts the slope of the color curve.
- **Reset buttons:** Click this to restore the individual slider setting to its default value, then click **Apply** or **OK**.
- **Color preview box:** The color image indicates visually how the **Gamma**, **Brightness** and **Contrast** sliders affect the final color settings of your display device. In Desktop mode, clicking on this with your mouse pointer will change the image.
- **Hotkeys:** Click this button to open the **Color Hotkeys Settings** dialog. There you can assign hotkeys for adjusting your color settings within a full screen 3D application environment. To activate this button, you must select the **Full Screen 3D** radio button.
- **Defaults:** Click this to restore all of the color settings to the default values, then click **Apply** or **OK**.

4-9. Options

The Options tab provides detailed driver information and access to the card's specifications. You can also enable or disable the ATI taskbar icon.

- **Version Information:** Provides the driver version number, 2D version number and the driver build information.
- **Details:** Clicking this button provides the graphics card's hardware details and driver information.
- **Reactivate all warning messages:** Allows you to reactivate any disabled graphics warning messages.
- **Enable ATI taskbar icon application:** Unchecking this allows you to disable the ATI taskbar applications and removes the ATI icon from your system tray.
- **Show ATI icon on taskbar:** Unchecking this allows you to remove the ATI icon from your system tray without disabling the ATI icon applications.
- **Disable quick resolution feature:** Quick resolution feature is accessible by leftclicking the ATI icon in the system tray. Checking this option disables this feature.
- **Reduce DVI frequency on high-resolution displays:** Resolves display corruption or no image at high resolutions (for example 1280x1024 @75Hz) using a digital DVI display. (This setting has no effect when using a DVI-to-VGA adapter.)
- **Alternate DVI operational mode:** Use this option if you are experiencing display corruption on your DVI flat panel.

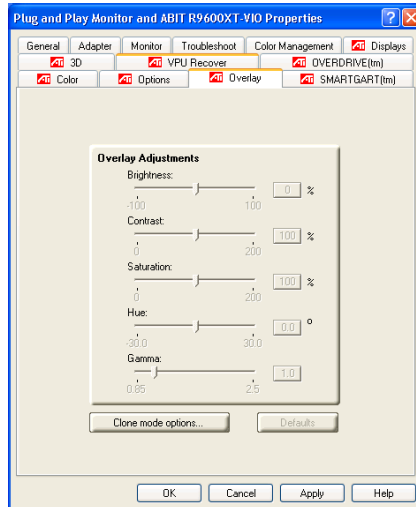


4-10. Overlay

The Overlay tab allows you to configure the brightness, contrast, saturation, hue and gamma properties of your video overlay.

NOTE: Video overlay allows for the viewing of streaming video on your PC. However, there is only one video overlay, which is only available on the **Primary** display. The video overlay controls are automatically activated during playback of any video file type that supports overlay adjustments.

- **Brightness:** Use this slider to adjust the brightness of the video image.
- **Contrast:** Use this slider to adjust the contrast in the video image.
- **Saturation:** Use this slider to adjust the vividness of the color. Sliding it all the way to the left removes all color and produces a black and white picture.
- **Hue:** Use this slider to adjust the pureness or tint of the red, green and blue components of the color.
- **Gamma:** Use this slider to adjust the overall intensity of the video image.



- **Clone mode options:** Click this button to access Clone Mode overlay settings. These settings only apply to video content when viewed in dual-controller Clone mode.
- **Defaults:** Clicking this button allows you to reset the Overlay settings to default values.

Clone Mode Options:

- **Standard:** Video content is displayed on your Primary display only.
- **Theater Mode:** Video content is displayed on your Primary and Secondary displays. Video content is displayed on your Secondary display(s) is always in full screen mode.

NOTE: Your computer must be set for 16-bit color depth or higher to use this mode.

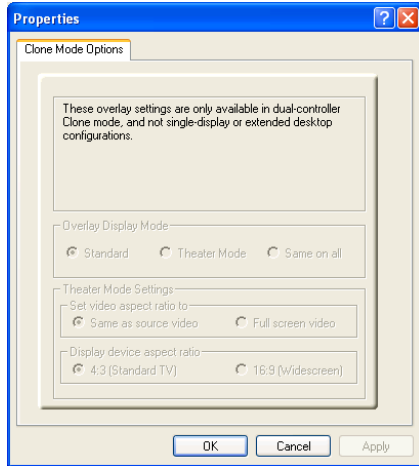
- **Same on all:** Video content is displayed on your Primary and Secondary display is exactly the same manner. For example, all displays will show video output in full screen mode.
- **Theater Mode Settings:** These settings are available when Theater Mode is selected.
- **Same as source video:** The aspect ratio of the source video is maintained for full screen display.

NOTE: This option may result in black bars on either the horizontal or vertical sides of the video display.

- **Full Screen Video:** The source video is scaled so that your display is showing full screen.

NOTE: If the source video contains horizontal black bars, as do some DVD movies, the full screen video will also contain black bars.

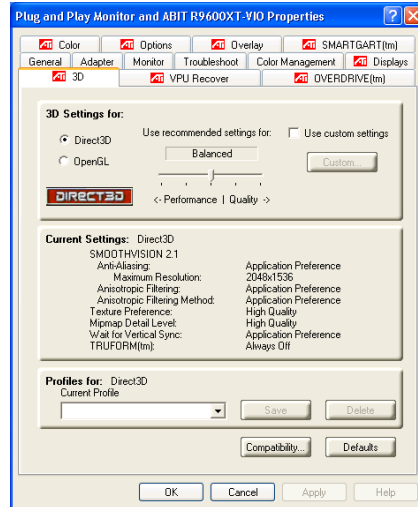
- **4:3 [Standard TV]:** Select this option if the aspect ratio of the display device showing full screen video has the standard 4:3 aspect ratio (standard TVs and monitors).
- **16:9 [Widescreen]:** Select this option if the aspect ratio of the display device is showing full screen video has a 16:9 aspect ratio (widescreen HDTVs).



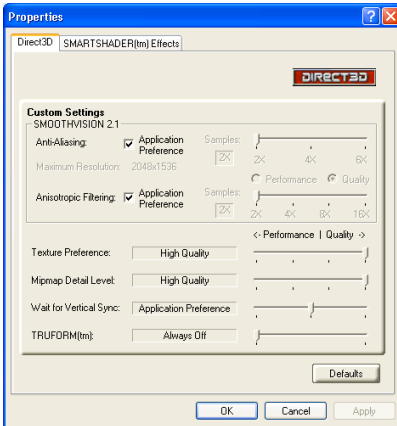
4-11. 3D Control Panel

Using this control panel, you can fine-tune the settings for Direct3D and OpenGL applications.

- **3D Settings For:** Click the check box to specify which 3D application settings you want to adjust.
- **Main slider:** Allows you to select the kind of application experience you'd like to have. Moving the slider to the left will maximize application performance, while moving the slider to the right will optimize 3D image quality.
- **Use custom settings:** When this box is checked, the **Main slider** is disabled, allowing you to move each individual slider in the **Custom Settings** section below. Setting the individual sliders gives you finer control over your application experience. Using **Custom Settings** is recommended for advanced users only.
- **Custom:** When **Use custom settings** is checked, the **Custom** option will be available to select. You may click this button to enter the Direct3D or OpenGL custom settings control panel.
- **Profiles for:** Allows users to save their current 3D configuration into a profile. Loaded profiles will be displayed under the current settings tab.
- **Compatibility:** Allows you to access advanced settings that can solve compatibility issues for a few specific Direct3D/OpenGL applications.
- **Defaults:** Click this button to reset the Direct3D/OpenGL settings to default values.



Custom settings for Direct3D/OpenGL:



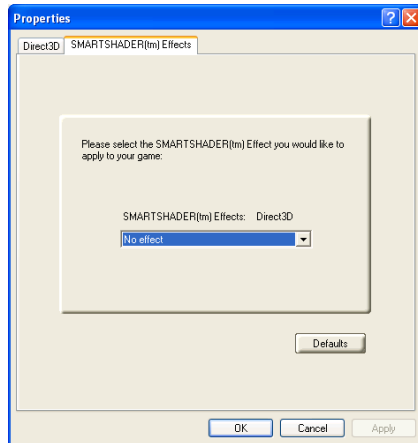
- **Anti-Aliasing:** This option improves image quality by removing jagged edges from 3D images, resulting in smoother, more natural-looking lines and contours.
- **Anti-Aliasing slider:** Anti-Aliasing can be applied using different number of samples (2X, 4X, 6X). More samples provide more realistic 3D images.
- **Anisotropic Filtering checkbox:** Anisotropic filtering uses a texture filtering technique that blends multiple texture samples together. Selecting **Application Preference** will result in sharper textures, with a negligible reduction in the application's performance.
- **Anisotropic Filtering slider:** The number of samples taken when anisotropic filtering is performed can vary. By moving this slider to the right, the number of samples taken increases and the quality of the final image increases. 16X provides maximum detail, crisplooking images as a result of the largest number of texture samples possible.
- **Texture Preference slider:** Selecting this decides whether your application should use high quality or high performance textures. Moving the slider to the right delivers the highest quality experience. Moving the slider to the left emphasizes a high performance solution while still providing good visuals.
- **Mipmap Detail Level slider:** Allows you to choose the texture quality of the mipmaps the application will use. Mipmaps are a collection of different sized textures of the same image. As the user moves closer to a 3D object the image quality should increase, requiring a higher quality texture of the same image.

The base mipmap is the highest quality texture, and all subsequent mipmaps are smaller sized textures of the same image. Moving the slider to the right improves image quality, and moving the slider to the left degrades image quality.

- **Wait for Vertical Sync:** Wait for vertical sync will lower the frame rate of full screen games but reduce the image tearing that can occur with the higher frame rate. Selecting **Application Preference** allows the application to decide whether or not it should display its frames at the refresh rate of the monitor. Selecting **Always Off** allows the application to run at its highest possible frame rate, regardless of the monitor's refresh rate which is typically less than the frame rate at which the application will run.
- **TRUFORM[tm]:** TRUFORM uses High Order Surface geometry to generate more detailed and realistic terrain and character models for applications that support this technology. Select **Application Preference** to enable TRUFORM. Select **Always Off** to disable TRUFORM.

SMARTSHADER[tm] Effects:

This item allows you to select the SMARTSHADER[tm] Effect you want to apply to your game.



4-12. SMARTGART[tm]

SMARTGART is a suite of testing and diagnostics tools that perform a variety of bus tests to determine the optimal settings for your graphics accelerator installed in your computer.

SMARTGART automatically configures your graphics device to the optimal settings. SMARTGART *does not* actually disable any AGP functionality in your computer's hardware. It simply instructs the display driver not to use a specific AGP function if that specific AGP function hasn't passed the SMARTGART diagnostics test.

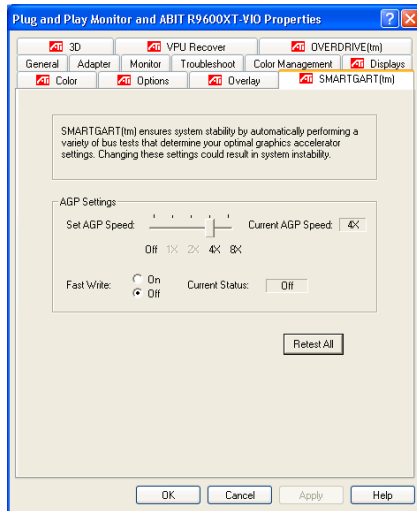
Warning: Changing the AGP settings could result in system instability.

- Set AGP Speed:** Experienced users can manually change the AGP speed. You will need to reboot your computer for this change to take effect. The possible AGP speed is dependent on the motherboard chipset and design. Your computer's available AGP speeds are shown in the SMARTGART dialog.
- Fast Write:** Fast Write allows the CPU to transfer data directly to the graphics accelerator.

NOTE: This setting is disabled for many computers because the motherboard is not capable of supporting this feature.

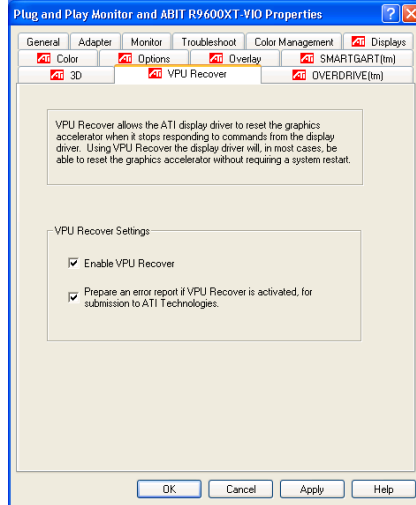
- Retest All:** Click this button to retest all graphic bus capabilities. All tests and diagnostics are initiated immediately following a system restart. Any settings that have previously been set to **Off** will be turned on, providing the test passes.

NOTE: Problems can arise if the user enables a secondary graphics accelerator (in a multiple monitor environment) after the operating system has loaded. The problem exists because the secondary graphics card is enabled after the SMARTGART diagnostic test have been run. To ensure system stability you should restart the computer *after* the secondary graphics accelerator is enabled so that both graphics accelerators can be tested with SMARTGART.



4-13. VPU Recover

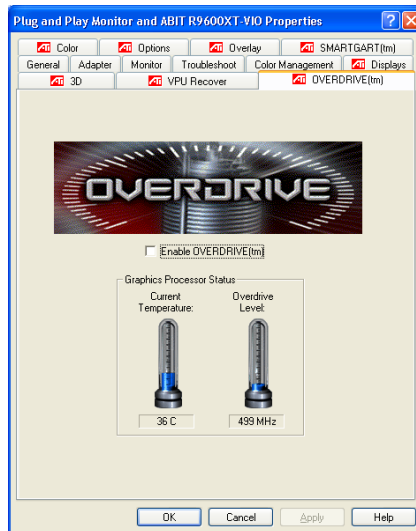
- Enable VPU Recover:** Place a check here to enable VPU Recover. When the option is not checked, other controls in the VPU Recover control panel are grayed out.
- Prepare an error report if VPU Recover is activated, for submission to ATI Technologies:** Place a check here to allow VPU Recover, once it is activated, to generate an error report that you can send to ATI via email.



4-14. OVERDRIVE[tm]

The OVERDRIVE™ control panel provides users with a safe and intelligent graphics processor clocking utility. OVERDRIVE™ constantly monitors the graphics processor, pushing its frequency to the maximum, while always ensuring that the processor temperature stays at a safe level. If the temperature of the graphics processor ever gets too hot, OVERDRIVE™ will automatically decrease the clock until a safe temperature is reached.

- Enable OVERDRIVE[tm]:** Click this check box to enable OVERDRIVE™ feature.



Chapter 5. HYDRAVISION™

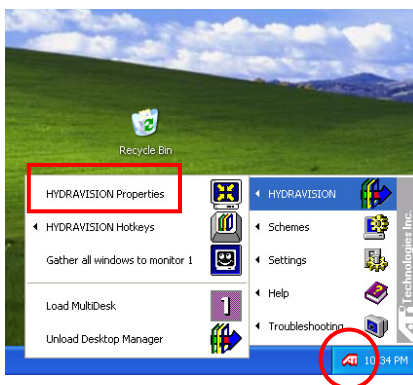
HYDRAVISION™ enables you to quickly and easily tailor your computer desktop to the way you work, so you can manage increased amounts of information and improve your productivity.

Accessing HYDRAVISION:

After installation of display drivers, you will find the ATI icon on the Windows taskbar's status area.

1. Right-click the ATI icon.
2. Select HYDRAVISION.
3. Click HYDRAVISION Properties.

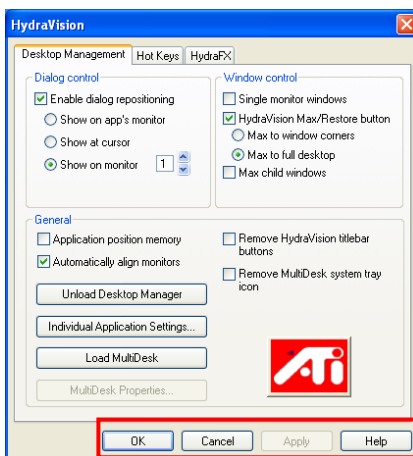
NOTE: Besides clicking the ATI icon to launch HYDRAVISION Desktop Manager, another way to do this is to click “Start” → “All Programs” → “ATI HydraVision” → “Hydra Vision Properties”.



The HYDRAVISION Desktop Manager allows you to modify your display options. You can access the **Desktop Management** and **Hot Keys Dialogs** by clicking on the appropriate tab in the Desktop Manager.

Along the bottom of each HYDRAVISION Dialog are four buttons: **OK**, **Cancel**, **Apply** and **Help**.

- **OK:** Click this button to implement the changes you've made in the HYDRAVISION Dialog and exit the Desktop Manager. Changes take effect immediately unless you see a message prompting you to restart your computer.



- **Cancel:** Click this button to discard *all* changes made to any section of the HYDRAVISION Dialog and close the Desktop Manager.
- **Apply:** Click this button to implement your changes without closing the Desktop Manager.
- **Help:** Click this button to open HYDRAVISION's online help. You can also get context-sensitive on-screen help by moving your mouse over the relevant text for each control. For using each HYDRAVISION function, please refer to this online help.

MultiDesk:

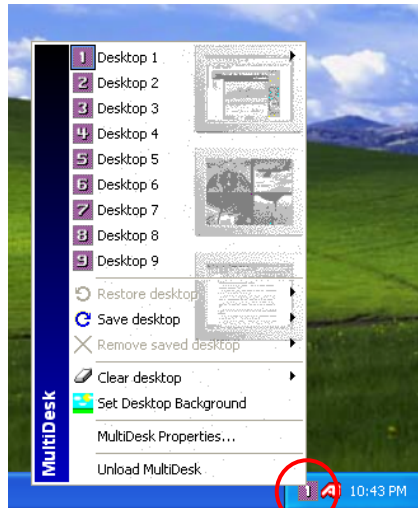
HYDRAVISION supports multiple desktops. With MultiDesk, one active desktop will always be visible, while up to eight active desktops can reside in the background. When MultiDesk is running, the MultiDesk icon in the system tray displays the number assigned to the current desktop.

MultiDesk is installed with HYDRAVISION. However, multiple desktop support and HYDRAVISION can be loaded/unloaded and operated independently of each other.

Accessing MultiDesk:

MultiDesk can be accessed in several ways. You may click on the MultiDesk Properties button in the Desktop Management tab or right-click the MultiDesk Icon on the Windows taskbar's status area.

NOTE: For detailed information on how to operate MultiDesk, please click the Help button in the MultiDesk Properties tab.



Appendix A. Install PowerDVD

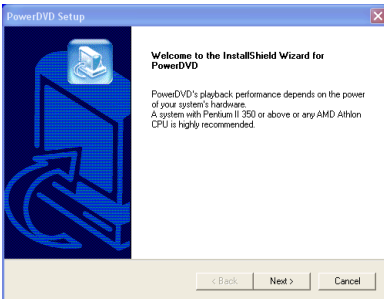
The PowerDVD is a simple-to-use DVD player combining all the features you would expect to find in a standard consumer DVD player, in addition to some very advanced functionality, such as full VCD 2.0 support, full precision video decoding, a choice of user interfaces, and video display options. You can play DVD titles or Video CDs - PowerDVD automatically determines the type of disc in the DVD drive and uses the correct playback method.

The installation procedures and screen shots in this section are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.

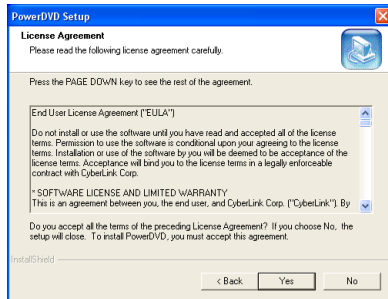
Insert the Installation CD into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this CD to enter the installation menu.



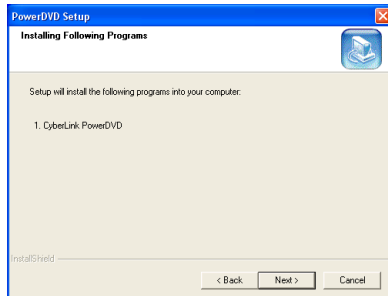
1. After entering the installation menu, move your cursor to [Utility] tab. Click [CyberLink PowerDVD 5.0].



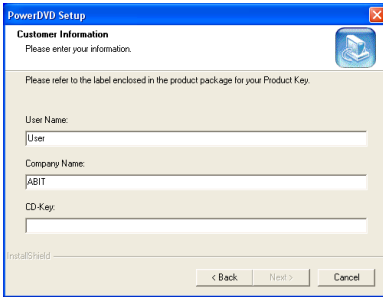
2. The welcome screen appears. Click "Next>" to start installation.



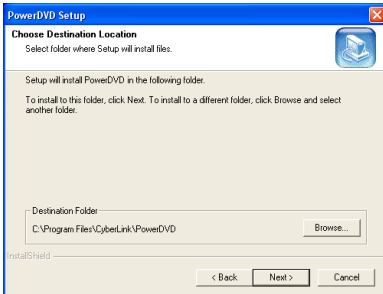
3. Click "Yes" to continue.



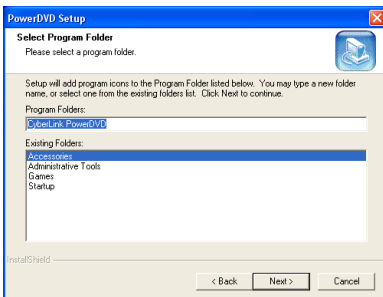
4. Setup will install PowerDVD into your computer. Click "Next>" to continue.



5. Enter your name, the name of the company for whom you work, and the product serial number. Click “Next>” to continue.

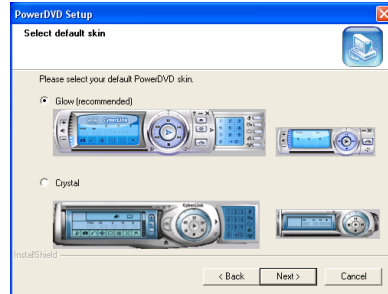


6. Setup will install PowerDVD in the following folder. To install to this folder, click “Next>”. To install to a different folder, click “Browse...” and select another folder.

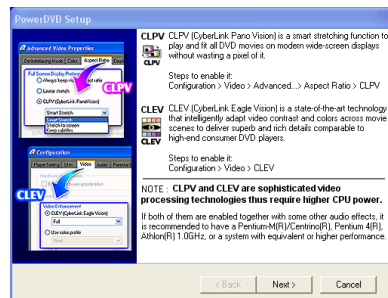


7. Type a new folder name, or select

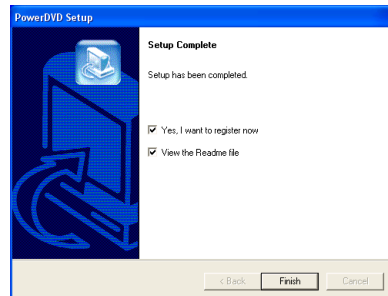
one from the existing folders list. Click “Next>” to continue.



8. Select your default PowerDVD skin, and click “Next>” to continue.



9. Click “Next>” to continue.



10. Select the options you need, and then click “Finish>” to complete the setup.

Appendix B. Install DirectX

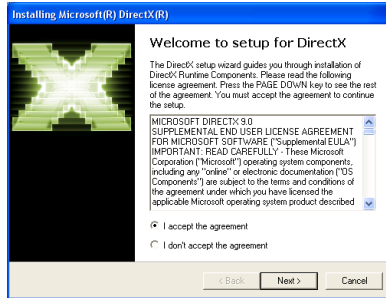
For the best gaming capability, we suggest that you install the latest DirectX driver. Some newer games will also ask you to install the DirectX driver before you start them.

The installation procedures and screen shots in this section are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.

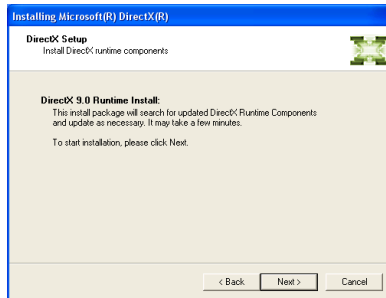
Insert the Installation CD into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this CD to enter the installation menu.



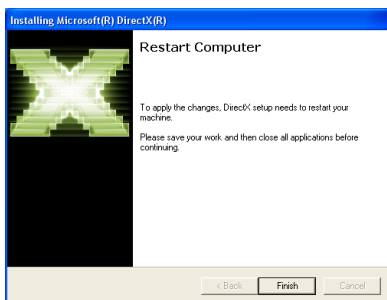
1. After entering the installation menu, move your cursor to [Utility] tab. Click [DirectX 9.0b].



2. The welcome screen appears. Read the license agreement carefully. Select “I accept the agreement”, and click “Next>” to continue.



3. Click “Next>” to start installation.



4. Click “Finish” to end the installation.

NOTE: Some games written for older DirectX versions may not work properly under DirectX 9. Please make sure your application support DirectX 9 before installation. Also note that the DirectX 9 cannot be uninstalled in the normal way.

Appendix C. BIOS Flashing Utility

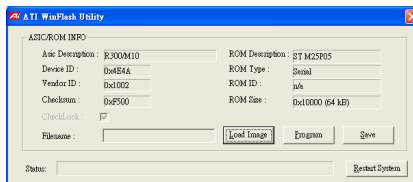
You may update the newest drivers or BIOS files from your dealer or directly download from our WEB site at <http://www.abit.com.tw>.

NOTE: When you use the flash utility to flash the BIOS, the screen will be blank for about 10 seconds. This is a normal situation, not a malfunction. Do not reboot your computer during this period, or you may cause the flash to fail.

You may flash the BIOS under Windows[®] or DOS environment.

Windows[®] Environment:

1. Insert the Installation CD into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this CD to enter the installation menu.
2. After entering the installation menu, move your cursor to [Utility] tab. Click [ATI Flash]. The screen on the right hand side will appear.
3. Click **Load Image** button to load the BIOS file.
4. Click **Program** button to start flashing the loaded BIOS file.
5. When the flash is complete, click **Restart System** button to reboot your computer system to make flash take effect.



DOS Environment:

1. Reboot your computer into DOS environment.
Insert the Installation CD into your CD-ROM drive.
2. Copy all files to a new directory from path D:\Utility\FIash\DOS. (D: refers to the CD-ROM drive letter)
3. Copy the new BIOS binary file to the new directory.
4. Change to the new directory and type the following command:
atiflash -p [Num] [File].rom
([Num] refers to adapter number; [File] refers to the name of BIOS binary file.)
Then press the "Enter" key. The program will begin flashing your display card BIOS.
5. When the flash is complete (the screen will display images again), you must reboot your computer system to make flash take effect.

The following commands are for the ATI Flash ROM programming utility, for your reference only.

ex :

```
atiflash -p 0 bios.rom
```

----- ATIFlash 1.29 (OEM version) Help -----

Format: ATIFLASH [command] [parameter1] [parameter2] [parameter3] <option/s> [command]:

-i	Display information of ATI PCI adapters in the system.
-p <Num> <File> [r]	Write BIOS image in file <File> to flash ROM in Adapter <Num>. Reboot after write if [r] flag is specified
-pm <Num> <File> [r]	Write BIOS image for MAC
-s <Num> <File> [Size]	Save BIOS image from adapter <Num> to file <File>. First [Size] kbytes of ROM content is saved if [Size] is specified.
 <option/s>:	
-loading	Searches BIOS image from current directory & loads first image found that matches BIOSP/N of the current ROM content, regardless of BIOS revision. Usage: "-p <Num> -loading"
-load505	Same function as '-loading' flag, but checks for specific P/N 113-50501-102. Usage: "-p <Num> -load505"
-f	Force flashing regardless of security checkings (e.g. AsicID & BIOS file info check OR boot-up card).
--h	obscure flag to enable help.

*<Num> = adapter number, <File> = filename, [Size] = data block size in KBytes

*Use command -i to see the adapter numbers in the system.

DOS errorlevel returned 0-pass 1-failure 2-rom already programmed

Appendix D. How to Get Technical Support

(From our website) <http://www.abit.com.tw>
(In North America) <http://www.abit-usa.com>
(In Europe) <http://www.abit.nl>

Thank you for choosing ABIT products. ABIT sells all our products through distributors, resellers and system integrators; we have no direct sales to end-users. Before sending email for tech support please check with your resellers or integrators if you need any services, they are the ones who sold you your system and they should know best as to what can be done, how they serve you is a good reference for future purchases.

We appreciate every customer and would like to provide the best service to you. Providing fast service to our customers is our top priority. However we receive many phone calls and a huge amount of email from all over the world. At the present time it is impossible for us to respond to every single inquiry. Therefore it is quite possible that if you send an email to us that you may not receive a response.

We have done many compatibility tests and reliability tests to make sure our products have the best quality and compatibility. In case you need service or technical support, please understand the constraint we have and **always check with the reseller who sold the product to you first.**

To expedite service, we recommend that you follow the procedures outlined below before contacting us. With your help, we can meet our commitment to provide the best service to the **greatest number of ABIT customers:**

- 1. Check the Manual.** It sounds simple but we have taken a lot of care in making a well-written and thorough manual. It is full of information that doesn't only pertain to motherboards. The CD-ROM included with your board will have the manual as well as drivers. If you don't have either one, go to our Program Download Area of the Website or FTP server.
- 2. Download latest BIOS, software or drivers.** Please go to our Program Download area on our Website to check to see if you have the latest BIOS. They are developed over periods of time to fix bugs or incompatibilities. **Also please make sure you have the latest drivers from your peripheral cards makers!**
- 3. Check the ABIT Technical Terms Guide and FAQ on our Website.** We are trying to expand and make the FAQs more helpful and information rich. Let us know if you have any suggestions. For hot topics check out our HOT FAQ!

- 4. Internet Newsgroups.** They are a great source of information and many people there can offer help. ABIT's Internet News group, alt.comp.periphs.mainboard.abit, is an ideal forum for the public to exchange information and discuss experiences they have had with ABIT products. Many times you will see that your question has already been asked before. This is a public Internet news group and it is reserved for free discussions. Here is a list of some of the more popular ones:

alt.comp.periphs.mainboard.abit

comp.sys.ibm.pc.hardware.chips

alt.comp.hardware.overclocking

alt.comp.hardware.homebuilt

alt.comp.hardware.pc-homebuilt

- 5. Ask your reseller.** Your ABIT authorized distributor should be able to provide the fastest solution to your technical problem. We sell our products through distributors who sell to resellers and stores. Your reseller should be very familiar with your system configuration and should be able to solve your problem much more efficiently than we could. After all, your reseller regards you as an important customer who may purchase more products and who can urge your friends to buy from him or her as well. They integrated and sold the system to you. They should know best what your system configuration is and your problem. They should have reasonable return or refund policies. How they serve you is also a good reference for your next purchase.
- 6. Contacting ABIT.** If you feel that you need to contact ABIT directly you can send email to the ABIT technical support department. First, please contact the support team for the branch office closest to you. They will be more familiar with local conditions and problems and will have better insight as to which resellers offer what products and services. Due to the huge number of emails coming in every day and other reasons, such as the time required for problem reproduction, we will not be able to reply to every email. Please understand that we are selling through distribution channels and don't have the resources to serve every end-user. However, we will try to do our best to help every customer. Please also remember that for many of our technical support team English is a second language, you will have a better chance of getting a helpful answer if your question can be understood in the first place. Be sure to use very, simple, concise language that clearly states the problem, avoid rambling or flowery language and always list your system components. Here is the contact information for our branch offices:

North America and South America:

ABIT Computer (U.S.A.) Corporation

45531 Northport Loop West,
Fremont, California 94538, U.S.A.

Tel: 1-510-623-0500

Fax: 1-510-623-1092

sales@abit-usa.com

technical@abit-usa.com

<http://www.abit-usa.com>

U.K. and Ireland:

ABIT Computer (U.K.) Corporation Ltd.

Unit 3, 24-26 Boulton Road,
Stevenage, Herts SG1 4QX, U.K.

Tel: 44-1438-228888

Fax: 44-1438-226333

sales@abitcomputer.co.uk

technical@abitcomputer.co.uk

*Germany, Benelux (Belgium, Netherlands, Luxembourg),
Denmark, Norway, Sweden, Finland, and Switzerland:*

AMOR Computer B.V. (ABIT's European Office)

Van Coehoornstraat 7,
5916 PH Venlo, The Netherlands

Tel: 31-77-3204428

Fax: 31-77-3204420

sales@abit.nl

technical@abit.nl

<http://www.abit.nl>

*Austria, Czech, Romania, Bulgaria, Yugoslavia, Slovakia,
Slovenia, Croatia, Bosnia, Serbia, and Macedonia:*

Asguard Computer Ges.m.b.H

Schmalbachstrasse 5,
A-2201 Gerasdorf/Wien, Austria

Tel: 43-1-7346709

Fax: 43-1-7346713

asguard@asguard.at

Japan:**ABIT Computer (Japan) Co. Ltd.**

Fax: 81-3-5396-5110

<http://www.abit4u.jp>***Shanghai:*****ABIT Computer (Shanghai) Co. Ltd.**

Tel: 86-21-6235-1829

Fax: 86-21-6235-1832

<http://www.abit.com.cn>***Russia:*****ABIT Computer (Russia) Co. Ltd.**

Fax: 7-095-937-2837

techrussia@abit.com.tw<http://www.abit.ru>***France, Italy, Spain, Portugal, and Greece:*****ABIT Computer France SARL**

Tel: 33-1-5858-0043

Fax: 33-1-5858-0047

<http://www.abit.fr>***All other territories not covered above please contact Taiwan Head Office:***

When contacting our headquarters please note we are located in Taiwan and we are 8+ GMT time. In addition, we have holidays that may be different from those in your country.

ABIT Computer Corporation

No.323, Yang Guang St., Neihu, Taipei, 114, Taiwan

Tel: 886-2-8751-8888

Fax: 886-2-8751-3382

sales@abit.com.twmarket@abit.com.twtechnical@abit.com.tw<http://www.abit.com.tw>

7. **RMA Service.** If your system has been working but it just stopped, but you have not installed any new software or hardware recently, it is likely that you have a defective component. Please contact the reseller from whom you bought the product. You should be able to get RMA service there.
8. **Reporting Compatibility Problems to ABIT.** Because of tremendous number of email messages we receive every day, we are forced to give greater weight to certain types of messages than to others. For this reason, any compatibility problem that is reported to us, giving detailed system configuration information and error symptoms will receive the highest priority. For the other questions, we regret that we may not be able to reply directly. But your questions may be posted to the Internet news group in order that a larger number of users can have the benefit of the information. Please check the news group from time to time.
9. **How to Get Technical Support:** If you encounter any problems and need help from our technical staff, please take the time to fill out the Technical Support Form and send it to your dealer or our technical support mailbox. The mailbox address is: technical@abit.com.tw. We will try to solve your problem as soon as possible. You must provide specific information on your equipment. Also please describe in detail the problems you encountered. It's helpful and enables our technicians to analyze your problems more quickly.

Information on items marked with an asterisk "*" on the Technical Support Form are required.

Thank you

ABIT Computer Corporation

<http://www.abit.com.tw>



Technical Support Form

Company Name:

Phone Number:

Contact Person:

Fax Number:

E-mail Address:

VGA Card Product Name	*		
GPU	*	BIOS	*
Memory	*	O/S	*
<input type="checkbox"/> TV-Out <input type="checkbox"/> DVI <input type="checkbox"/> VIO		Driver	*
M/B maker/model	*		
CPU Type	Intel: <input type="checkbox"/> PII <input type="checkbox"/> PIII <input type="checkbox"/> P4 AMD: <input type="checkbox"/> Socket A Other: _____		
Chipset	<input type="checkbox"/> Intel <input type="checkbox"/> VIA <input type="checkbox"/> SiS <input type="checkbox"/> ALi Chipset code name description: _____		
Hardware name	Type	Specifications	
HDD IDE1 IDE2			
CD-ROM IDE1 Drive IDE2			
System Memory Size (SDRAM)	*	*	
Monitor maker/model	*	*	

Problem Description:

