

AT-009 SERIES GRAPHIC CARD

USER MANUAL

**For any driver updates, please refer to ATI's website:
www.ati.com**

DOC No. : M02501

Rev. : A0

Date : 7, 2002

Part No. : 25-12164-00

Table of Contents

Chapter 1 Overview

AT-009 Series Card.....	1-1
1.1 Performance.....	1-3
1.2 Software Compatibility.....	1-3
1.3 Monitor Compatibility.....	1-3

Chapter 2 Installation

2.1 What's Included In the Package.....	2-1
2.2 Installing the Card.....	2-1
2.3 AT-009 Card Layout.....	2-3

Chapter 3 Software Utility

3.1 Installing on Windows 95/98/ME.....	3-2
3.2 Installing on Windows 2000.....	3-5
3.3 To enable/disable a display device.....	3-8
3.3.1 To adjust your monitor screen size.....	3-9
3.3.2 To adjust your monitor synchronization....	3-10
3.4 Dual display Device Options.....	3-11
3.5 Using the CRT/TV Features.....	3-12
3.5.1 How to use TV-out cables correctly.....	3-12
3.5.2 How to change TV setting.....	3-12

Chapter 4 Using HydraVision™

Appendix A Specifications

A.1 Hardware Specifications.....	A-1
A.2 Programming Information.....	A-2
A.3 Resolution Table.....	A-2

This Page Left Blank for Note

Notice

Handling Precautions

Warning :

1. Static electricity may cause damage to the integrated circuits on the card.
Before handling any card outside of its protective packaging, ensure that there is no static electric charge in your body.
2. There is a danger of explosion if the battery is incorrectly replaced.
Replace only with the same or an equivalent type recommended by the manufacturer.

Observe the following basic precautions when handling the card or other computer components:

- Wear a static wrist strap which fits around your wrist and is connected to a natural earth ground.
- Touch a grounded or anti-static surface or a metal fixture such as a water pipe.
- Avoid contacting the components on add-on cards, boards and modules with the “gold finger” connectors plugged into the expansion slot. It is best to handle system components by their mounting bracket.

The above methods prevent static build-up and cause it to be discharged properly.

Trademark

All trademarks mentioned in this manual are registered properly of the respective owners.

Copyright

This manual may not, in whole or in part, be photocopied, reproduced, transcribed, translated, or transmitted in whatsoever form without the written consent of the manufacturer, except for copies retained by the purchaser for personal archival purposes.

Overview

AT-009 Series Card

RADEON™ 9000/9000 Pro is a powerful and versatile graphic solution. RV250 graphics technology from ATI delivers high-end performance and features to the mainstream market. From 3D gaming or business multimedia applications, to DVD and streaming video, RV250 has the horsepower and advanced technology to deliver a cutting-edge experience. It is the perfect solution for those that hunger for all the features one would expect in a top-of-the-line product, but need them at an affordable price.

Features:

- Powered by the RADEON™ 9000/9000 Pro graphics processing unit (GPU)
- Supports DirectX 8.1 ® and OpenGL®; also, 3D resolutions (32-bit color) up to 2048x1536
- AGP universal bus (for AGP 2X/4X systems)
- Features ATI's innovative TRUFORM™ technology that makes the outlines of 3D characters and objects look smoother and more natural than ever before
- SMARTSHADER™ technology takes advantage of the DirectX® 8.1 features to enable more complex and realistic texture and lighting effects
- SMOOTHVISION™ anti-aliasing – the most advanced anti-aliasing to eliminate distracting visual artifacts for smoother looking images and without serious performance compromise
- CHARISMA ENGINE™ II supports full Transformation, Clipping and Lighting (T&L) at 50 million triangles/second peak processing capability

- HYPER Z™ II technology conserves memory bandwidth for improved in demanding applications and boosts effective bandwidth by over 25%
 - PIXEL TAPESTRY™ II, the RADEON 9000/9000 Pro™ 3D rendering engine, power an incredible 2.4 Gigatexels per second for the highest fill rates in 32-bit at high resolutions
 - VIDEO IMMERSION™ II technology enables integration of industry-leading digital video features, including advanced deinterlacing algorithms for unprecedented video quality and integrated digital TV decode capability
 - Integrated Transformation, Clipping and Lighting
 - Twin Cache Architecture
 - SuperScalar Rendering
 - Single-Pass Multi-Texturing
 - True Color Rendering
 - Triangle Setup Engine
 - Texture Cache
 - Bilinear/Trilinear Filtering
 - Line & Edge Anti-Aliasing
 - Full-Screen Anti-Aliasing
 - Texture Compositing
 - Texture Decompression
 - Specular Highlights
 - Perspectively Correct Texture
 - Mapping
 - Mip-Mapping
 - Z-Buffering and Double-Buffering
 - Emboss, Dot Product 3 and Environment bump mapping
 - Spherical, Dual-Paraboloid and Cubic environment mapping
 - Fog effects, texture lighting, video textures, reflections, shadows, spotlights, LOD biasing and texture
 - Dual independent displays (DVI/CRT, DVI/TV, CRT/TV)
-
- * Provides S-video connect **(optional)**
 - * Provides DVI (Digital Visual Interface) output port **(optional)**
 - * HydraVision™ software **(optional)**

1.1 Performance

The card is a graphics accelerator. Computer functions like disk access and numerical calculation are not accelerated by the card. Because these operations also occur as Windows programs are running, the overall speed will depend on the mix of graphics operations and the other types of operations. It is not unusual to obtain an overall system speed increase of 2 times after installing the card. The speed of pure graphics operations, like dragging objects with a mouse, scrolling, and resizing, will be remarkably improved.

1.2 Software Compatibility

The key function of the card is its VGA compatibility. Unlike coprocessor-based, or IBM® 8514A-type display cards, the card is 100% compatible with your DOS computer. This means that all DOS software will run correctly with the VGA card without modification.

The VGA compatibility includes backward compatibility with the EGA, CGA and MDA standards. All DOS software will include drivers for at least one of these display types and will be fully compatible with the card. The card is also fully compatible with AGP BIOS extensions for resolutions higher than 640 by 480.

When the card is used in VGA, backward compatibility, 16-color AGP modes, or the graphics engine of the **ATI RADEON 9000/9000 Pro** card is not used. The speed in these modes will be comparable to the fastest type of standard VGA card.

1.3 Monitor Compatibility

The card will work with any VGA, Super VGA or Multisync monitor.

AT-009 SERIES GRAPHIC CARD USER MANUAL

Super VGA monitors can support IBM standard VGA plus the 800x600 extended mode used by most VGA cards, and the 1024x768 interlaced mode used by most VGA cards and the IBM 8514A.

Multisync monitors are more expensive and will work at all Super VGA resolutions plus additional higher resolutions or refresh rates. The most useful multisync monitor specification for determining maximum resolution and refresh capability is the horizontal frequency range. For PC use, the lower limit of the range must be no less than 30KHz. The upper limit is usually 48K Hz, 57K Hz or 64K Hz. These correspond to a maximum resolution of 1024 x 768, 60 Hz refresh, 1024 x 768, 72 Hz refresh rate; and 1280x1024, 60 Hz refresh rate, respectively.

By default, the card will drive your monitor at a screen refresh rate of 60 Hz. In other words, it repaints the screen 60 times per second. If the screen is not displayed properly when you boot your system, your monitor may not support this refresh rate for the resolution chosen. In this case, you must either lower the resolution to one that can be supported at 60Hz or lower the refresh rate. The maximum refresh rate supported by your monitor is specified with the Refresh Rate utility.

Refer to your manual for information on the monitor capabilities. If you are not sure what refresh rate is supported, you can always try a higher rate. If the screen looks good, the rate is supported (and will be easier on your eyes).

Installation

2.1 What's Included in the Package

The VGA card package includes the following:

1. VGA card accelerator card
2. Software diskettes which contain the necessary files
3. This manual

2.2 Installing the Card

1. Unplug the computer and remove the cover.

Shut down the computer and turn off any attached equipment (such as a monitor or printer).

Unplug the power cord.

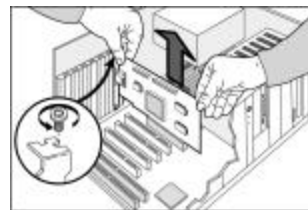
Remove the cover.

2. Remove the current graphics card.

If there is a graphics card currently in the computer, use the following guidelines to remove it:

Detach any cables which are attached to the current graphics card and remove the bracket screw locking the card down.

Grasp the card by the edges and pull it straight out of the motherboard slot. If the card sticks in the slot, rock it gently from end to end to dislodge it. Remember to save the screw.

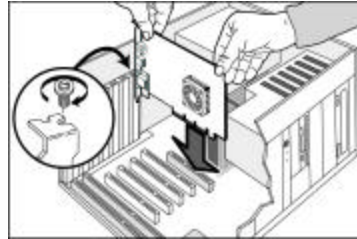


Note:

If the computer has a graphics chip soldered down on the motherboard, refer to the manual for the system or motherboard for information on how to disable it.

3. Insert the Graphics Accelerator card.

Locate the empty AGP socket on the motherboard and use the following instructions to insert the Graphics Accelerator reference card into that socket:



Grasp the Graphics Accelerator reference card by its edges.

Align it with the empty AGP socket on the motherboard, and gently insert it into place.

Make sure that the card is pressed evenly and completely into the socket.

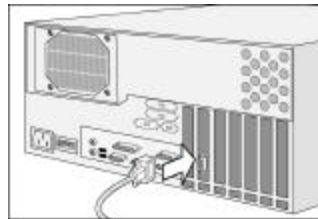
Fasten the card with the bracket screw.

Note:

Use the figure above to help locate the Accelerated Graphics Port (AGP) socket on your motherboard. The exact configuration of the components on your motherboard may differ from the figure. Look for a single, smaller socket between the set of PCI sockets and the processor.

4. Reconnect all cable and Replace the cover.

Plug the cable from your computer monitor into the back of the Graphics Accelerator reference card. Make sure it is securely fastened. Carefully replace the computer cover and plug the power cord back in.

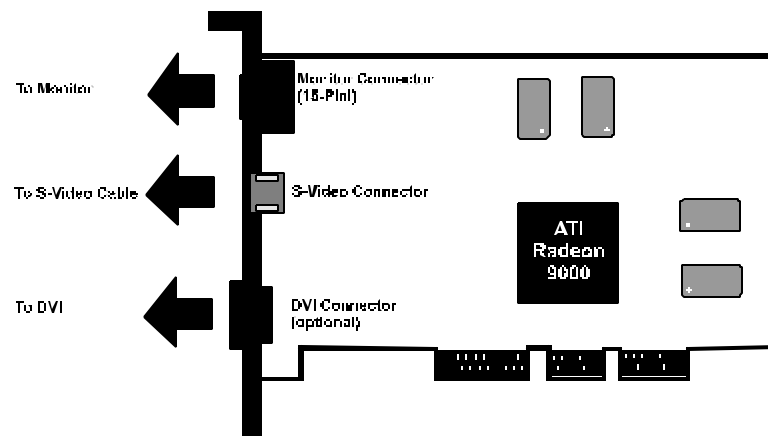


Caution!

Before you turn on your system, you have to be sure the VGA card is setup already and all the cables are connected.

DO NOT connect / disconnect TV-out cable when your TV or PC is Power On.

2.3 AT-009 Card Layout



This Page Left Blank for Note

Software Utility

The card is 100% VGA compatible and as such needs no special display drivers to run application software correctly at standard VGA resolutions and color depths. However, enhanced display drivers are supplied with the VGA card because they provide accelerated performance, higher color depths and higher resolutions for software applications. The VGA card supports resolutions as high as 1600x1200 pixels, and color depths of up to 32 bits per pixel. Higher graphics resolutions and higher color depths provide greater clarity and detail when using the supplied drivers for graphics programs. When configuring your software to work with the board, it may help to bear in mind that the drivers compatible with the VGA card fall into four categories.

Driver Installation Procedure

General Installation Notes:

1. *Before install Windows 95 Driver, please install Windows 95 OSR2.0 "USBSUPP.EXE" first (brings it up to OSR2.1 level).*
2. *The operating system and DirectX* must be installed on the system prior to installation.*

To install Windows 95 OSR2.0 with USB, you must have OSR2.0 installed already. Otherwise, first install OSR2.0 and then use the USB support update (you must use the same update language of your Windows language).

Install USBSUPP

1. Start Windows Explorer.
2. Click on the CD ROM drive to display the contents of the CD ROM disk.
3. Double click on D:\USBSUPP\USBSUPP.EXE (English)
(If D is not your CD-ROM drive, substitute D with the correct drive letter.)

OSR2.0 with USB has:

Version “Windows 95” and Version Number “**4.03.1212**” or “**4.03.1214**”.

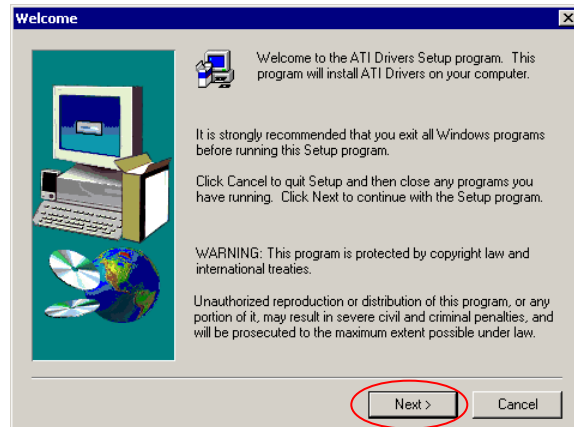
3.1 Installing on Windows 95/98/ME

General Installation Notes:

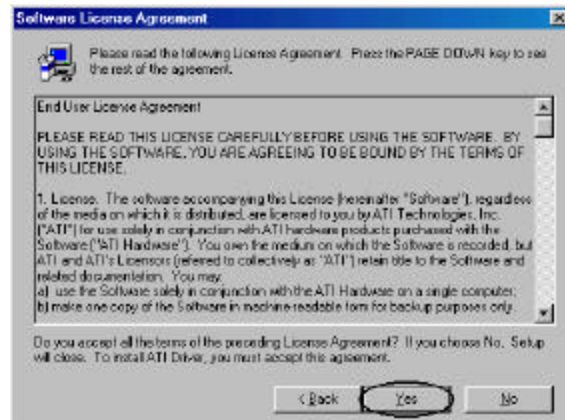
- If your motherboard does not support Intel processor, please install the AGP Driver provided by the motherboard company before you install VGA Driver.
- Before installing our user-friendly VGA configuration utility, please set up the VGA display as "standard PCI Graphics Adapter" mode.
- Microsoft DircetX allows 3D hardware acceleration support in Windows 95/98. For software MPEG support in Windows 95/98, you must first install the Microsoft DirectX, and then an MPEG Video Player.

1. Start Windows.
2. Switch display to Windows' Standard Display Adapter (VGA) mode and then restart Windows.
3. Insert the CD installation disc into your CD-ROM drive.
4. The CD should autorun and the following screen will appear.

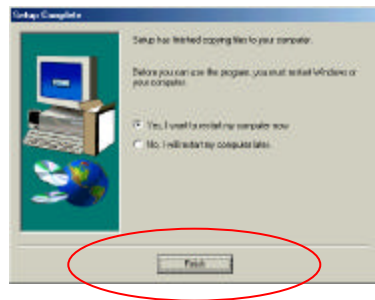
5. When the Welcome box appears. Click on the "Next" button to go to the next step.



6. The License Agreement dialog box appears. Click on "Yes" button.

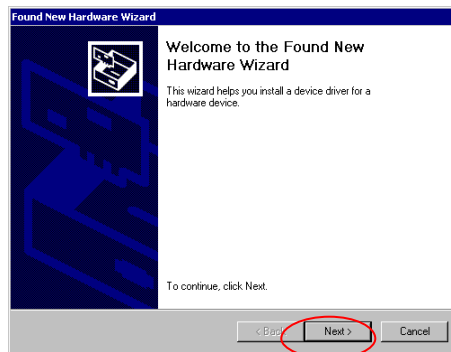


7. When the Windows SETUP has completed copying the files to the computer. Windows will prompt you to restart Windows with the “Yes” option. Then click on “**Finish**” button.



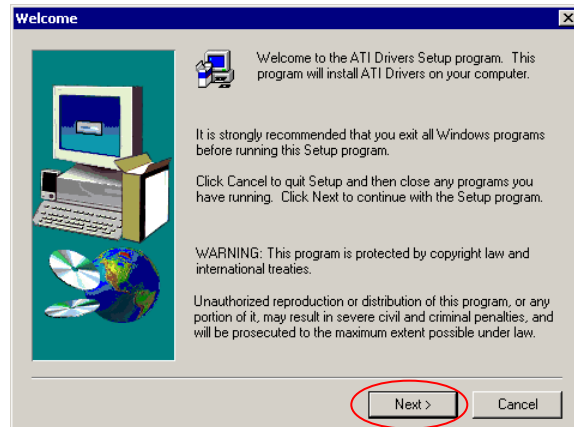
3.2 Installing on Windows 2000

1. Start Windows.
2. When Windows detects your graphics card, the **Found New Hardware Wizard** dialog box appears.

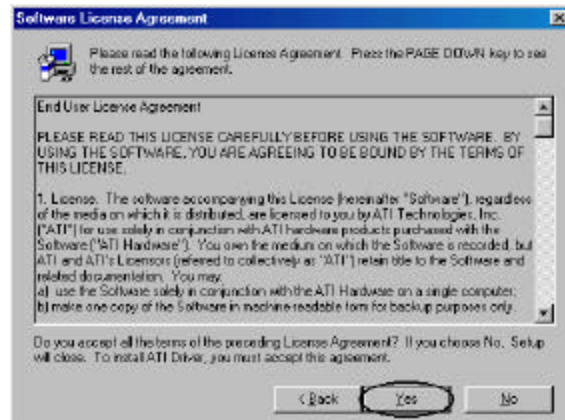


3. Click **Cancel** to enter the Windows desktop.
4. Insert the CD installation disc into your CD-ROM drive.
5. The CD should autorun and the following screen will appear.

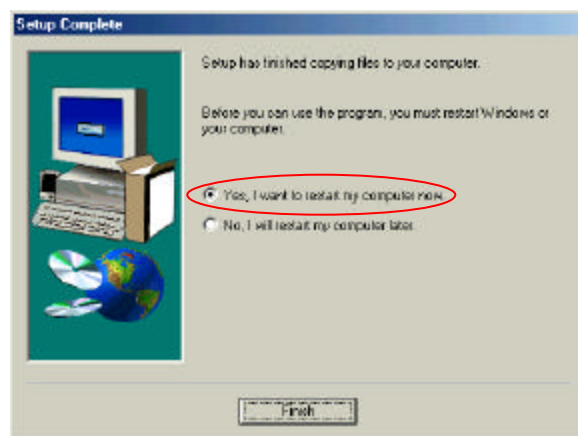
6. When the Welcome box appears. Click on the "Next" button to go to the next step.



7. The License Agreement dialog box appears. Click on "Yes" button.



8. The “Digital Signature Not Found” dialog box appears. Click on “**Yes**” button.
9. When the Windows SETUP has completed copying the files to the computer. Windows will prompt you to restart Windows with the “**Yes**” option. Then Click “**Finish**” button.

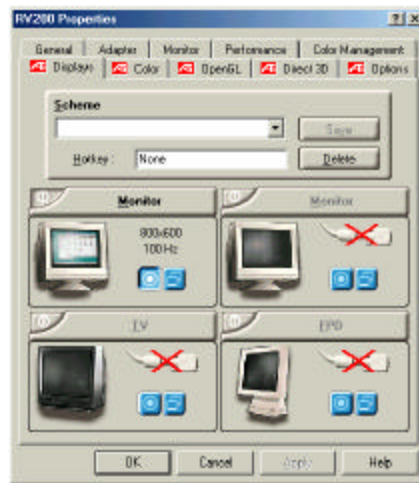



WARNING:

Some games written for older DirectX versions may not work properly under DirectX 8.1. Make sure that your applications or games support DirectX 8.1 before installing the DirectX 8.1 runtime libraries.

3.3 To enable/disable a display device

To make sure if your installation is successful, you can Right-click the Windows desktop and click **Properties**. Click the **Settings** tab and then click **Advanced**. The **RV250 Properties** dialog box appears.



1. Click the enable/disable  button for the display device you want to enable/disable. A desktop image appears on the corresponding display device icon when the button is in the "Enable" position.
2. Click either **“OK”** or **“Apply”** to save the changes you have made.

Note:

- *At least one of your display devices must be enabled.*
- *At least one of your display devices must be set to the primary displays mode.*

3.3.1 To adjust your monitor screen size

1. Click the **“Monitor”** button.
Your monitor must be enabled before you can change its display properties.
2. Click the **“Adjustments”** tab.



3. Click the (+) and (-) buttons in the Vertical/Horizontal Screen area to change your screen size.
4. The (+) and (-) buttons under Vertical Screen increase/decrease the vertical size of your monitor display.
5. The (+) and (-) buttons under Horizontal Screen increase/decrease the horizontal size of your monitor display.
6. Click **“OK”** or **“Apply”** to save the changes you have made.

3.3.2 To adjust your monitor synchronization

1. Click here to view Display Properties at the Settings tab.
2. Click the **“Advanced”** button.
3. Click the **“Displays”** tab.

If you are running an extended desktop, you must first select the video adapter whose display properties you want to change.

4. Click the **“Monitor”** button.

Your monitor must be enabled before you can change its display properties.

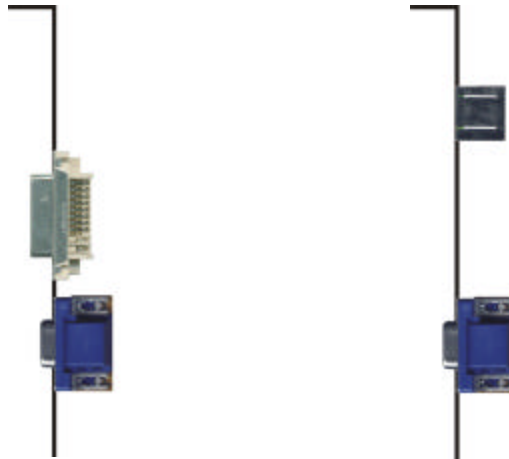


5. Click the **“Advanced”** tab.
 6. In the Synchronization box, click the Horizontal or Vertical buttons to adjust synchronization.
- Click either **“OK”** or **“Apply”** to save the changes you have made.

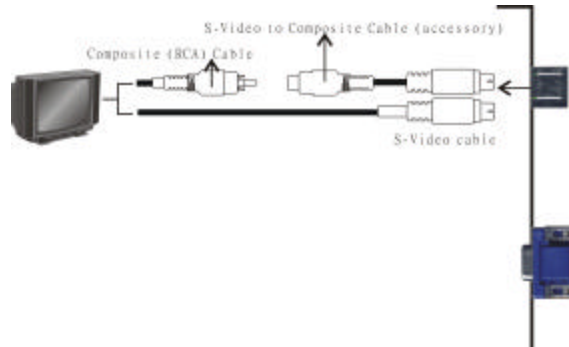
3.4 Dual Display Device Options

The following are sample display combinations for the card:

- One RGB monitor and one DVI
- One RGB monitor and one TV (S-Video)



- One RGB monitor and one TV (Composite)



3.5 Using the CRT/TV Features (TV-out function optional)

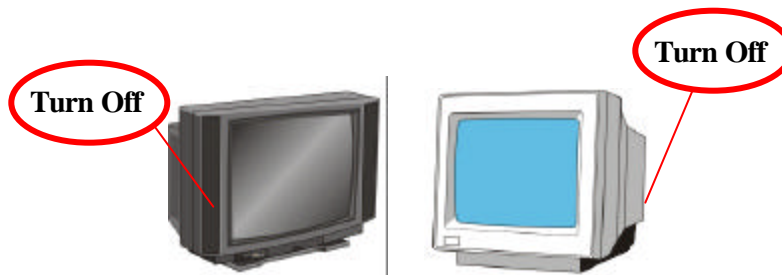
3.5.1 How to use TV-out cables correctly

Caution!

Before you turn on your system, you have to be sure the VGA card is setup already and all the cables are connected.

DO NOT connect / disconnect TV-out cable when your TV or PC is Power On.

1. Power off your PC and TV first.
2. Connect the signal cable the Video input at your TV form your VGA card, and then power on your PC and TV.




3.5.2 How to change TV setting

Your graphics accelerator is configured for TV display. Using this feature, you can connect a TV to your computer's video output to view the desktop.

If you are not using a TV for your computer's display, it is recommended that you disable TV display for optimal performance (higher refresh rates). You can re-enable TV display at a later date.

- For **NTSC**, 640x480x60Hz and 640x400x60Hz(hidden)
- For **PAL**, 640x480x50Hz and 800x600x50Hz(hidden)

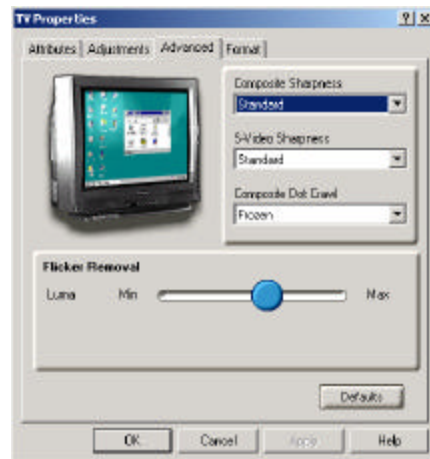
- Low resolution modes but they are hidden and used by application programs and cannot be select end user.

1. Click here to view **Display Properties** at the **Settings** tab.
2. Click the **Advanced** button.
3. Click the **Displays** tab.
If you are running an extended desktop, you must first select the video adapter whose display properties you want to change.
4. Click the  button for the **TV** device.
Your TV must be enabled before you can change its display properties.



Note:
TV Mode (only)
NTSC: 640X480 60Hz
PAL: 800X600 50Hz

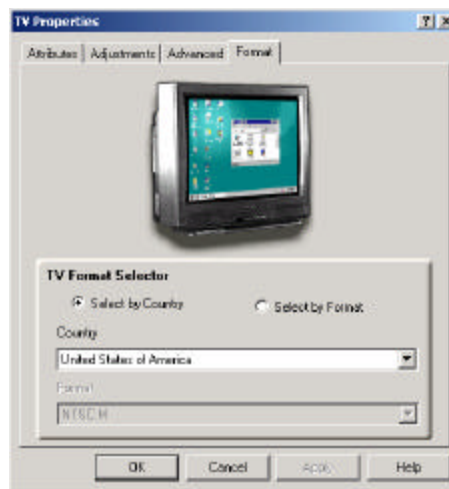
5. Click the **Advanced** tab.



6. In the **S-Video Sharpness** box, select a value from the list.
7. Click OK or Apply to save the changes you have made.

To select your TV broadcast format by country

1. Click here to view **Display Properties** at the **Settings** tab.
2. Click the **Advanced** button.
3. Click the **Displays** tab.
If you are running an extended desktop, you must first select the video adapter whose display properties you want to change.
4. Click the **TV** button.
Your TV must be enabled before you can change its display properties.
5. Click the **Format** tab.



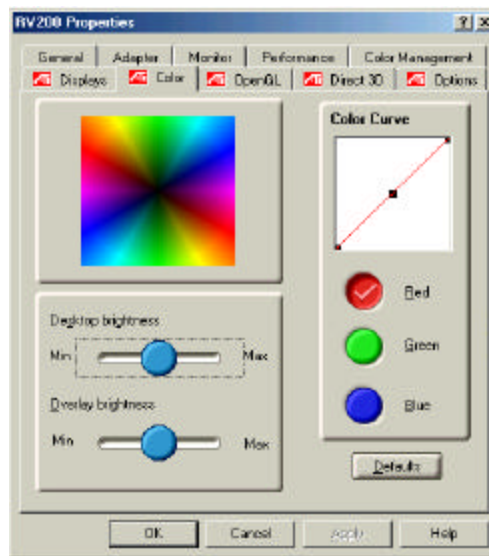
6. In the **Country** box, select a country from the list.
7. Click OK or Apply to save the changes you have made.

Note:

In general, there is only one broadcast format supported by a given country.

To add/remove color correction control points

1. Click here to view Display Properties at the “**Settings**” tab.
2. Click the “**Advanced**” button.
3. Click the “**Color**” tab.



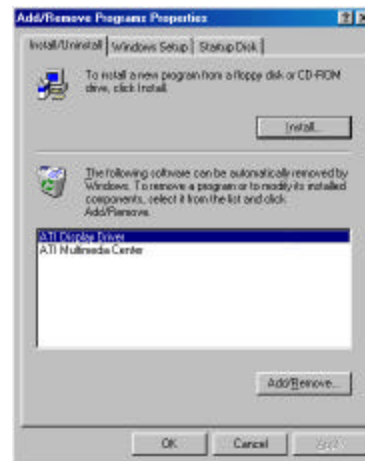
4. In the Color Curve area, click the radio button corresponding to the desired color component (**Red, Green or Blue**)
5. To add a control point, hold the “**SHIFT**” key down while clicking the mouse cursor at the desired point on the color curve. A control point appears on the color curve at the selected spot.
6. To remove a control point, hold the “**CTRL**” key down while clicking the mouse cursor on the control point to be removed. The control point disappears from the color curve.
7. Click “**OK**” or “**Apply**” to save the changes you have made.

Verifying Driver Installation

1. From the Windows 9x desktop, click on "My Computer", then "Control Panel", and then, finally, "System".
2. You should be in the "System Properties" window. Click on the "Device Manager" tab. From here, go down to "Display Adapter" and click. The drivers associated with the display adapter should read: "**RV250**". If this is not the case, the drivers will need to be re-installed.

Uninstall Display Driver

1. Click "**Start**", and then point to **Settings**.
2. Click **Control Panel**.
3. Double-click the **Add/Remove Programs** icon.
4. Click the **Install/Uninstall** tab.
5. Click **ATI Display Driver** from the list.
6. Click **Add/Remove** button.
7. The system will prompt you to restart your computer. Click **Yes** to restart.



This Page Left Blank for Note

Using HydraVision™

Using HydraVision™ for Windows 2000

HydraVision™ software is specifically designed for use with Windows® 2000. HydraVision™ installation enables the Desktop Manager and creates a Windows® program group for HydraVision™ display management software.

HydraVision™ and the Desktop Manager are activated whenever Windows® starts. Installing HydraVision™ adds menu options to the ATI Icon.

Click on the ATI icon to access the application's features and help, or to unload the HydraVision™ Desktop Manager.

The HydraVision™ Desktop Manager allows you to modify your display options. You can access the Desktop Management and Hot Keys dialog boxes 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 implements the changes you have made in the HydraVision™ dialog and exits the Desktop Manager. Changes take effect immediately unless you see a message prompting you to restart your computer.

Cancel discards *all* changes made to any section of the HydraVision™ Dialog and closes the Desktop Manager.

Apply implements your changes without closing the Desktop Manager.

Help connects to local or online HTM-based help. You can also get context-sensitive on-screen help by moving your mouse over the relevant text for each control.

Desktop Management Controls

The **Desktop Management** dialog lets you to determine the behavior of pop-up windows and dialog boxes in a multiple monitor environment.

Dialog control:

Enable dialog repositioning- Toggles dialog control on and off. When it is checked, you can choose to have dialog boxes appear on the parent application's monitor. (The parent application is the application that generated the dialog box.) If the parent application or associated monitor cannot be located, the dialog box defaults to monitor 1. You can also choose to have dialog boxes appear on the monitor in which the cursor is located or to always appear on a specific monitor in the array.

Window control:

Single monitor windows- When this box is checked, windows are sized no larger than a single monitor. Windows that are placed on monitor splits are automatically relocated to the monitor on which most of the windows appears.

HydraVision™ Max button management- Allows you to control the behavior of the Windows **Maximize** button. When HydraVision™ running, a HydraVision™ Max/Restore button appears in the upper right corner of your application title bars. Clicking this icon makes the active window maximize in one of three ways:

1. **Max to window corners** causes windows to maximize to the monitor(s) that contain the window's upper left and lower right corners.

2. **Max to full desktop** causes windows to maximize to the entire monitor array.
3. **Max to current monitor** causes windows to maximize to the current monitor.

Max child windows- Keeps windows generated by parent applications from splitting across monitors (A child window is a window residing within a parent application windows.) The ability to keep child windows on a single monitor when maximized is extremely useful for editing multiple documents side by side in parent application.

Note:

HydraVision™ application title bar icon changes from a single square to two smaller squares when a window is in a HydraVision™ maximized state. Clicking the icon again restores the active window to its default state as a single square.

General:

Application position memory- Check this box to “remember” the size and location of application windows when they are closed and reapply those settings when the application is reopened.

Boot to single monitor- Check this box to enable a single monitor only when the computer starts. All other connected devices will be disabled.

Note:

Extended Desktop must be enabled before the computer is restarted.

Remove HydraVision™ title bar buttons- This box removes or restores the ATI buttons placed on the title bar in installed applications.

Remove MultiDesk system tray icon- This box removes or restores the MultiDesk system tray icon.

MultiDesk Settings- This button gives access to all the MultiDesk Properties. Here you enable, disable and name active desktops.

Load/Unload Desktop Manager- This button restores or removes the HydraVision™ Desktop Manager tracking program. You should only select this option if you do not want to use any multiple monitor dialog box controls and window controls or hot keys.

Note:

MultiDesk will not reload automatically when Windows restarts. You will need to reload MultiDesk from the Desktop Manager dialog box.

Load/Unload MultiDesk- This button restores or removes multiple desktop functionality.

Note:

MultiDesk will not reload automatically when Windows restarts. You will need to reload MultiDesk from the Desktop Manager dialog box.

Individual Application Settings- This button allows you to specify, enable and disable desktop management settings for individual applications. You can access these settings by clicking on the down arrow of the HydraVision™ icon in the application title bar or by clicking the Individual Application Settings button in the Desktop Management dialog.

Note:

*These settings override the global settings defined in the **Desktop Management** dialog.*

Hot Keys Controls

HydraVision™ allows you to specify hot key shortcuts for common operations such as starting applications, snapping applications to designated monitors, and changing display resolution.

Note:

Hot Keys only work if HydraVision™ is installed and loaded.

Create/Remove Hot Keys

To create custom hot key sequences, select a Modifier key (shift, Alt, etc.), a Hot key, and the hot key function you want this key combination to perform. Click add to enter to your new combination in the Assigned hot keys list box. Click Apply to activate assigned hot keys.

Note:

ATI recommends that a modifier key be used with any function key (F1, F2, etc.) assigned as a hot key. This will prevent interference with the function of these keys in individual applications.

To delete a hot key from the **Assigned hot keys** list box, highlight it, click **Remove**, and then click **Apply**.

You can also disable all hot keys listed in the **Assigned hot keys** list box by checking the **Disable hot keys** box near the bottom of the **Hot Keys** dialog.

Using Hot Keys

You can use any assigned hot key at any time, from within any application, to change your display.

Provided hot key functions, include:

Snap App to Monitor	Allows you to move or “snap” active windows or dialogs from monitor to monitor for quick placement and viewing of desktop contents
HydraVision™ Pop-up Menu	Allows on-the-fly access to HydraVision™ controls
Run Application	Lets you start any application with a hot key
Gather All Windows to Monitor 1	Allows you to find applications that are hidden or are open and lost on disabled monitors
Find Cursor	Locates the cursor on a busy or crowded desktop
Next Desktop	Accesses other active desktops
Zoom Display In/Out	Causes the desktop resolution to increase or decrease

Zoom In/Out on Monitor	Causes the resolution of the active monitor to increase or decrease
------------------------	---------------------------------------------------------------------

MultiDesk

HydraVision™ software 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.

Note:

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

Right-click on this icon to access MultiDesk controls. In addition to accessing active desktops from the system tray, you can also access active desktops with a **Hot key** shortcut.

Note:

Hot Keys only work if HydraVision™ is installed and loaded.

To switch to another defined desktop, select the appropriate desktop number from the pop-up menu. To enable, disable and name active desktops, select MultiDesk Properties from the pop-up menu. The MultiDesk functionality can be removed by selecting Unload HydraVision™ MultiDesk from the pop-up menu.

MultiDesk Properties allows you to control the desktops. Right-click a Desktop tab to set it Active, Inactive, or Disabled. Inactive desktops MAY contain applications; however, they are temporarily disabled. Disabled desktops cannot contain any applications. If an Active or Inactive desktop that contains applications is disabled, the applications will be automatically moved to an Active desktop. You can also give a desktop a unique name. Double-click the desired desktop tab. The tab will turn gray and the cursor will blink. Simply

AT-009 SERIES GRAPHIC CARD USER MANUAL

type in the new name. When you have finished renaming the desktop click on the tab to save the change.

Keep on all desks allows you to have a selected application visible on all desktops. The MultiDesk functionality can be removed by selecting Unload ATI Icon or the Desktop Manager.

Note: *MultiDesk will not reload automatically when Windows restarts. You will need to reload MultiDesk from the Desktop Manager.*

Specifications

A.1 Hardware Specifications

Generic Classification

Video Display Adapter/Fixed Function Graphics Accelerator

Bus Type

32-bit AGP Bus

Video Connector

CRT Monitor: 15-pin VGA connector

S-video and composite connector

LCD standard 24-pin DVI (Digital Video Interface)

Graphics Accelerator

AT-009 Series for ATI RADEON™ 9000/9000 Pro

Display Memory

AT-009 Series use 64MB DDR SDRAM

Monitor Compatibility

All VGA, Super VGA and Multisync. The resolutions of 1280x1024 and 1024 x 768 require a multisync monitor with a 48 and 57K Hz maximum horizontal scan rate, respectively.

LCD Monitor Compatibility

All LCD monitor with DVI interface connector, the resolution of 1280x1024.

A.2 Programming Information

The AT-009 Series supports all VGA modes. This is the default configuration of the VGA BIOS.

The extended VGA graphics mode is invoked by the normal INT 10 mode call. All the VGA extended modes can be invoked with the VESA defined select extended mode BIOS call.

A.3 Resolution Table

Resolutions and color depth table.

GRAPHICS RESOLUTION	COLOR DEPTH			FRAME BUFFER SIZE	
640x480	8bpp	16bpp	32bpp	32MB	64MB
800x600	8bpp	16bpp	32bpp	32MB	64MB
1024x768	8bpp	16bpp	32bpp	32MB	64MB
1152x864	8bpp	16bpp	32bpp	32MB	64MB
1280x1024	8bpp	16bpp	32bpp	32MB	64MB
1600x1200	8bpp	16bpp	32bpp	32MB	64MB
1920x1080	8bpp	16bpp	32bpp	32MB	64MB
1920x1200	8bpp	16bpp	32bpp	32MB	64MB
1920x1440	8bpp	16bpp	32bpp	32MB	64MB

8bpp = 256 colors

16bpp = 64K colors = High color


32bpp = 16.7M colors = True color

The following table shows the resolutions for TV-Out:

GRAPHICS RESOLUTION	COLOR DEPTH			FRAME BUFFER SIZE	
640x480	8bpp	16bpp	32bpp	32MB	64MB
800x600	8bpp	16bpp	32bpp	32MB	64MB

LCD resolutions and color depth table for RV2A.

GRAPHICS RESOLUTION	COLOR DEPTH			FRAME BUFFER SIZE	
640x480	8bpp	16bpp	32bpp	32MB	64MB
800x600	8bpp	16bpp	32bpp	32MB	64MB
1024x768	8bpp	16bpp	32bpp	32MB	64MB
1152x864	8bpp	16bpp	32bpp	32MB	64MB
1280x1024	8bpp	16bpp	32bpp	32MB	64MB

 My monitor is not capable of high resolution or refresh rate.

It depends on the display characteristics of your monitor. Consult your monitor documentation for the proper configuration

This Page Left Blank for Note