

GV-RX24P256HE

Radeon™ HD 2400 Pro Graphics Accelerator

User's Manual

Rev. 101

12MD-RX24P2HE-101R

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Notice

Please do not remove any labels on VGA card, this may void the warranty of this VGA card

Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.

The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information contained herein.

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1. Introduction

1.1. Features

Powered by **ATI Radeon™ HD 2400 Pro** Graphics Processing Unit (GPU)

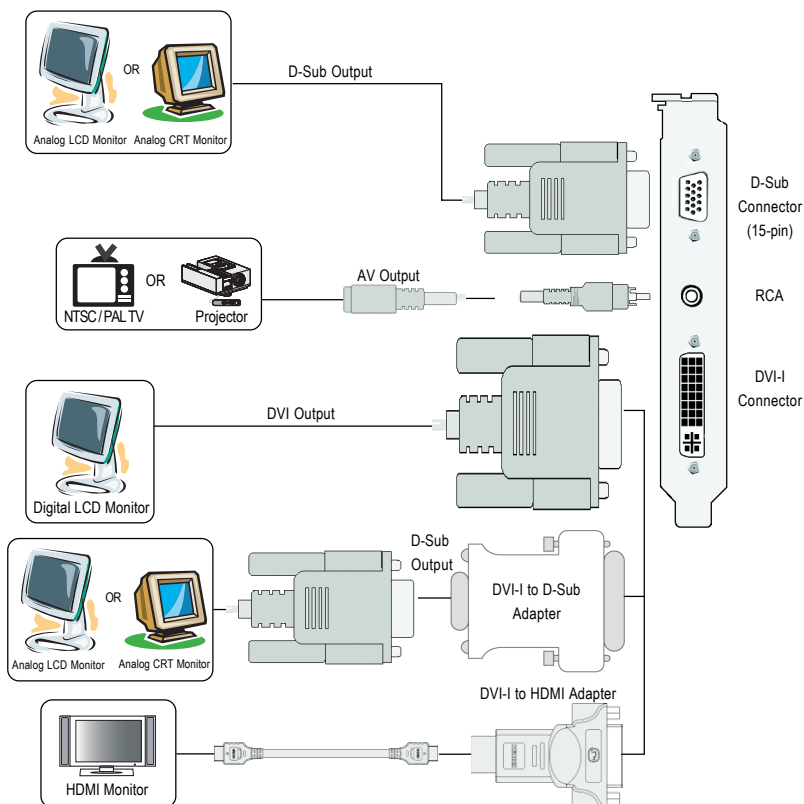
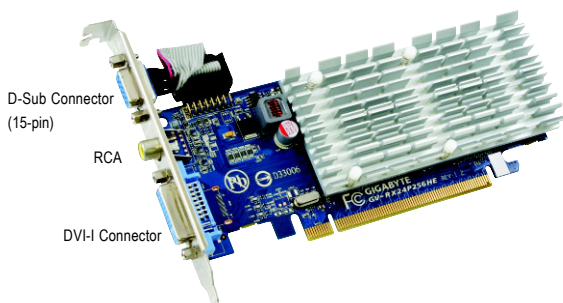
- Supports PCI Express x16
- Integrated with 256 MB GDDR2 memory
- Supports DirectX 10
- Supports AV output
- Supports 1 Dual-Link DVI-I connector
- Supports 1 D-Sub connector
- Supports HDMI connector (by adapter, optional)

1.2. Minimum System Requirements

- **Hardware**
 - Intel® Pentium® 4 or AMD Athlon™
 - 512 MB of system memory; 1 GB or more for best performance
 - Optical drive for software installation (CD-ROM or DVD-ROM drive)
- **Operating System**
 - Windows® Vista
 - Windows® XP with Service Pack 2 (SP2)
 - Windows® XP Professional x64 Edition

2. Hardware Installation

2.1. Board Layout





The entire Radeon HD 2000 series support HDMI output which can handle both audio and video signals. However, audio output from the onboard audio controller or the external sound card will be disabled when HDMI output is activated. If no need for HDMI output function, set the onboard audio controller or the external sound card to be the default Sound Playback device to obtain audio output from your system. For more details, refer to page 14.



Expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Turn off your computer and unplug power supply.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.

The card contains sensitive electric components, which can be easily damaged by static electricity, so the card should be left in its original packing until it is installed.

Unpacking and installation should be done on a grounded anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same point as the anti-static mat.

Inspect the card carton for obvious damage. Shipping and handling may cause damage to your card. Be sure there are no shipping and handling damages on the card before proceeding.

❗ **DO NOT APPLY POWER TO YOUR SYSTEM IF IT HAS BEEN DAMAGED ON THE CARD.**

❗ **In order to ensure your graphics card working correctly, please use official GIGABYTE BIOS only. Use none official Gigabyte BIOS might cause problem on the graphics card.**

2.2. Hardware installation

Installing Your graphics card.

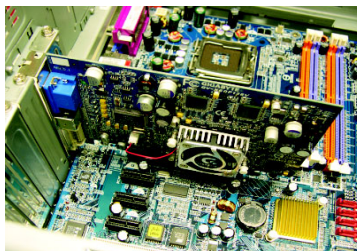
Now that you have prepared your computer, you are ready to install your graphics accelerator card.

To remove the existing graphics card:

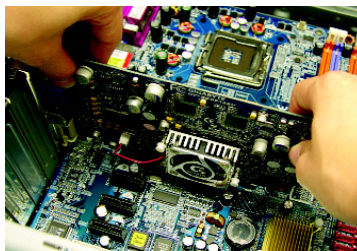
1. Power off the computer and monitor, then disconnect the display cable from the back of your computer.



2. Remove the computer cover. If necessary, consult your computer's manual for help in removing the cover.

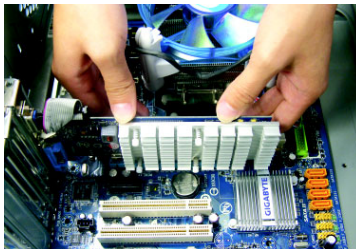


3. Remove any existing graphics card from your computer.



To install your new graphics card:

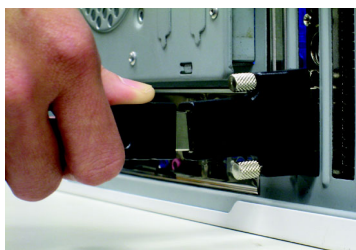
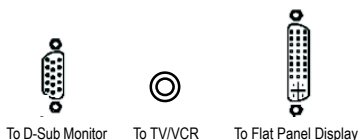
1. Locate a PCI Express x16 slot. If necessary, remove the metal cover from the slot; then align your graphics card with the PCI Express x16 slot, and press it in firmly until the card is fully seated.
- * Please make sure that the gold edge connector of the graphics card is securely inserted.



2. Replace the screw to fasten the card in place, and replace the computer cover.



3. Plug the display cable into your card; then turn on the computer and monitor. If your graphics card came with a DVI-I connector, you can connect a flat panel display to the appropriate connector, as shown below. Or use the DVI-I-to-HDMI adapter to connect an HDMI monitor.

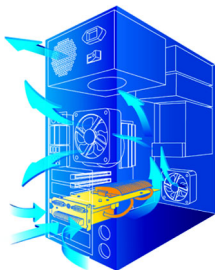


Connect an HDMI monitor via DVI-I to HDMI adapter

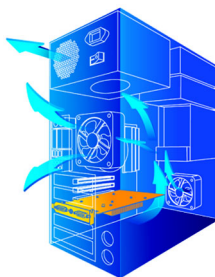
You are now ready to proceed with the installation of the graphics card driver. Please refer to next chapter for detailed instructions.

GIGABYTE Thermal Solution Guidelines:

1. GIGABYTE established the use of silent pipes on graphics card's thermal solution, and has been the leading company for silent thermal solution. GIGABYTE's passive thermal solution allows system to work perfectly in chassis with 40~50 degrees Celsius through the air flow of the system. Please beware of the other excess component or insufficient system thermal design that may cause high system temperature. Excess high temperature will affect the passive thermal design and thus compromising system stability.
2. GIGABYTE TECHNOLOGY's passive thermal design effectively implemented heat exchange, radiation and convection to improve stability of the system. Please maintain passive thermal sink at a normal and clean environment. Extra dust on heatsink may decrease the effectiveness of the thermal design.



Silent Thermal Technology



Passive Thermal Design

3. Software Installation

In this manual, we assume that your CD-ROM Drive letter to be Drive D:

The installation of Windows® XP drivers is very simple. When you insert the driver CD into your CD-ROM drive, you can see the AUTORUN window (if it does not show up, run "D:\setup.exe"). Then you can follow the guides to setup your graphics card driver. (Please follow the subsection 3.1.3 "Driver Installation" to install the driver for your graphics accelerator.)

3.1. Windows® XP Driver and Utilities Installation

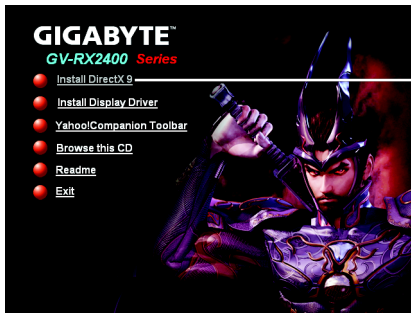
3.1.1. Operating System Requirement

- When loading the graphics card drivers for the system, please make sure your system has installed DirectX 9.0c or later version.
- If you install the graphics card drivers for the motherboard, which consist of SIS, or VIA chipsets, please install the appropriate driver program for that motherboard. Or please contact your motherboard nearest dealer for motherboard driver.

3.1.2. DirectX Installation

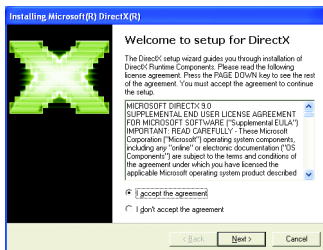
Install Microsoft DirectX to enable 3D hardware acceleration support for Windows® XP to achieve better 3D performance.

- Note: For software MPEG support in Windows® XP, you must install DirectX first. Users who run Windows XP with Service Pack 2 or above do not need to install DirectX separately.

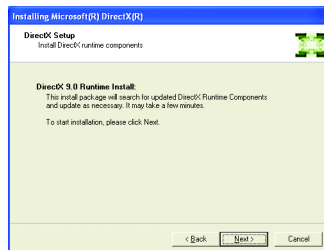


Step 1. When autorun window show up, click the **Install DirectX 9** item.

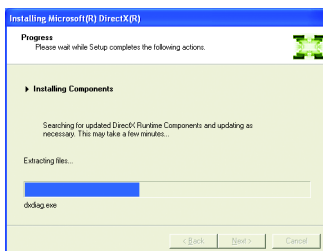
Click the **Install DirectX 9** item.



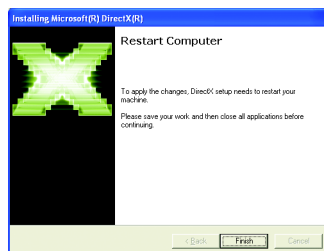
Step 2. Choose **I accept the agreement** and click the **Next** button.



Step 3. Click the **Next** button.



Installing the components.



Step 4. Click **Finish** to restart computer.

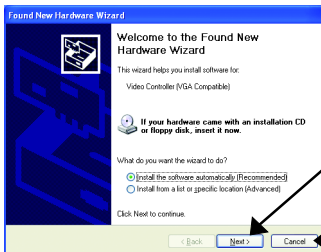
Then the DirectX 9 installation is completed.

3.1.3. Driver Installation

A. New hardware found

After the graphics card is inserted into your computer at the first time, the windows will automatically detect a new hardware in the system and pop out a "New Hardware Found" message. The following is the step-by-step installation guide.

Step 1: Found new hardware wizard: Video controller (VGA Compatible)

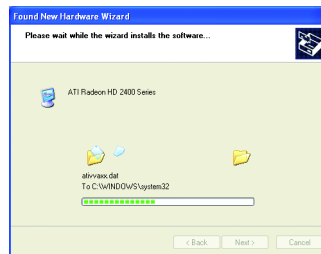


Click the **Next** button to install the driver. (There is a driver CD disk that came with your graphics accelerator, please insert it now.)

Or click the **Cancel** button to install the driver from AUTORUN window.

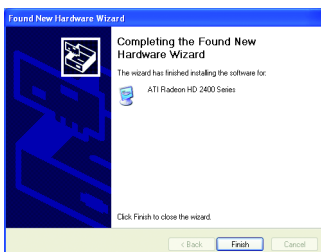
Step 2: Found new hardware wizard: Searching and installing

The wizard will search for the driver and install it automatically.



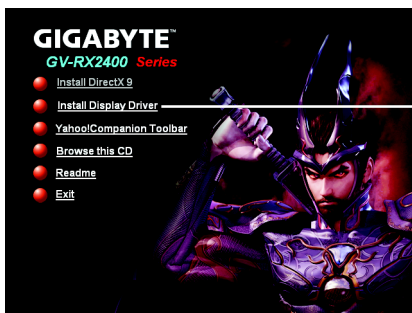
Step 3: Found new hardware wizard: Finish

Click the **Finish** button to finish the installation.



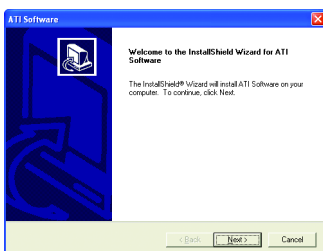
B. Driver installation (Autorun Window)

Insert the driver CD disk into your CD-ROM, and then you can see the AUTORUN window. If it does not show up, please run "D:\setup.exe".

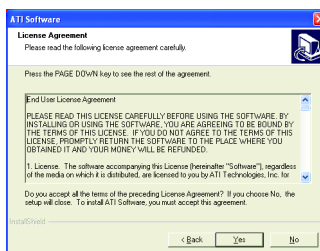


Step 1. When autorun window show up, click the **Install Display Driver** item.

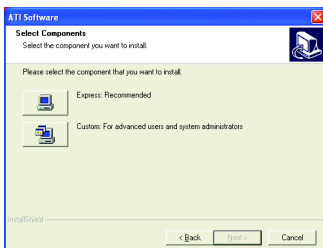
Click the **Install Display Driver** item.



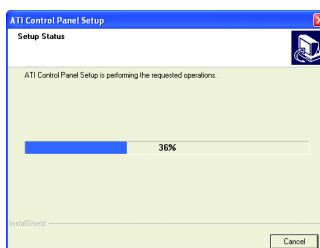
Step 2. Click **Next** button.



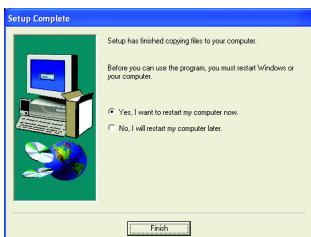
Step 3. Click **Yes** button.



Step 4. Click **Express** or **Custom** icon.



Windows installings the components.



Step 5. Click the **Finish** button to restart computer.

Then the driver installation is completed.

3.1.4. Taskbar Icon

ATI CATALYST™ Control Center:


After installation of the display driver, you will find an **ATI CATALYST™ Control Center** icon  on the taskbar's status area. The **ATI CATALYST™ Control Center** is used to configure all your graphics card settings. Right-click the icon to enter the **CATALYST™ Control Center** (refer to Fig. 1). Or you can right-click on the desktop and select **ATI CATALYST Control Center** (refer to Fig. 2).



Fig. 1

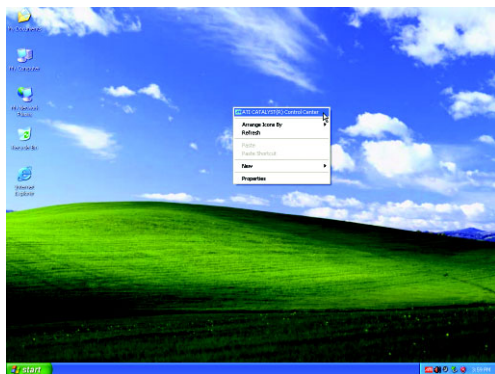


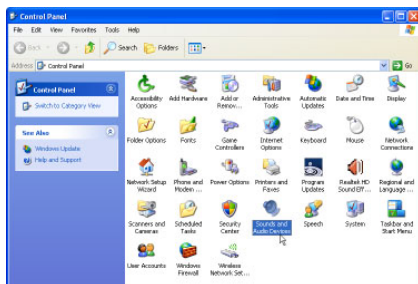
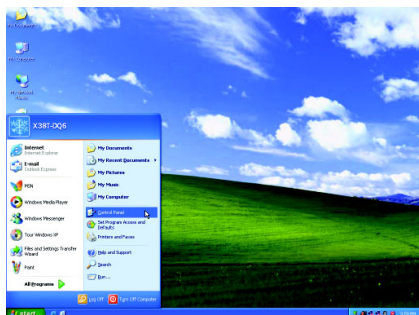
Fig. 2

Configuring Audio Output

Configure the default audio output device based upon your needs.

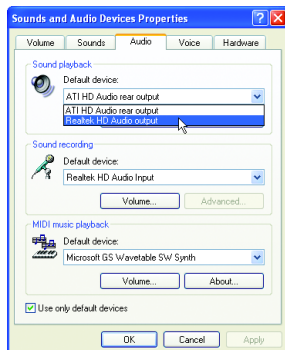
Step 1:

Go to Start > Control Panel > Sounds and Audio Devices.



Step 2:

In the **Sounds and Audio Devices Properties** dialog box, click the **Audio** tab.



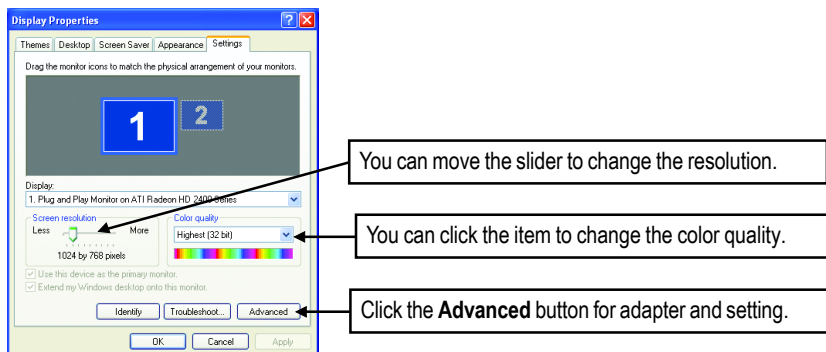
Using the picture to the left as the example, to set HDMI audio to be the default Sound Playback device, in the **Default device** box, select **ATI HD Audio rear output**. Otherwise, select **Realtek HD Audio output**, which is the onboard audio controller.

3.1.5. Display Properties pages

To access Display Properties pages, right-click on Desktop and then select **Properties**. The **Display Properties** dialog box shows the information of display adapter, color, the range of display area, and the refresh rate.

Settings (Resolutions and Color depth for Windows)

You may adjust the screen resolution and color quality settings in this dialog box.



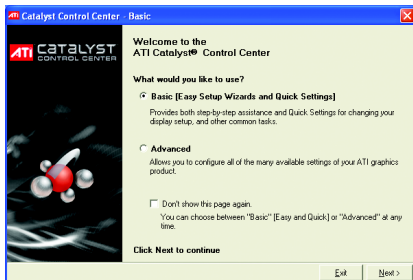
Display Matrix	Model	GV-RX24P256HE
	CRT+TV (Note)	Yes
	CRT+DVI	Yes
	DVI+TV	Yes
	DVI+TV+CRT	No
	HDMI+TV	Yes
	HDMI+CRT	Yes

(Note) The CRT+TV configuration requires that you connect your CRT display to the DVI-I connector on the card using the DVI-I to D-Sub adapter to ensure normal operation.

This configuration is not supported if the CRT monitor is directly attached to the D-Sub port on the card.

ATI CATALYST™ Control Center Basic View :

The Basic View is the default view when CATALYST Control Center is launched for the first time. This interface provides access to the basic settings and advanced features of your ATI graphics products. You can switch between Basic View and Advanced View at any time.



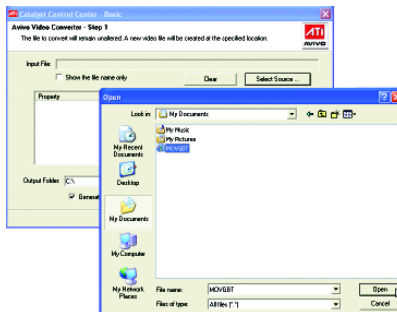
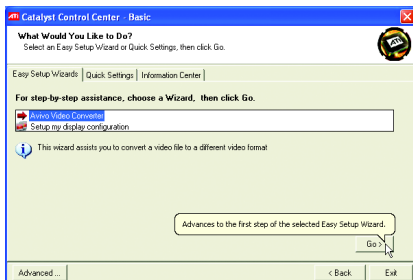
To access more settings in Basic View, click **Basic**, and then click **Next**.

Easy Setup Wizards:

Choose a wizard from the central list and click **Go** for step-by-step assistance.

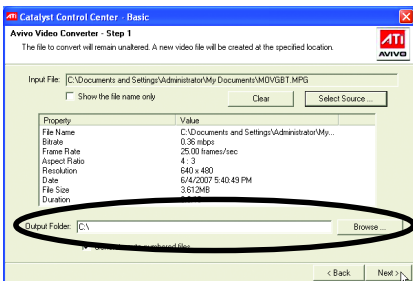
■ Avivo Video Converter

This wizard assists you to convert videos from one file format to another.

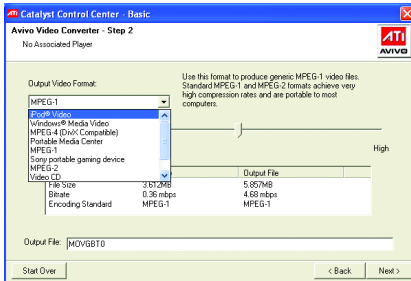


Step 1: Select **Avivo Video Converter**, then click **Go**.

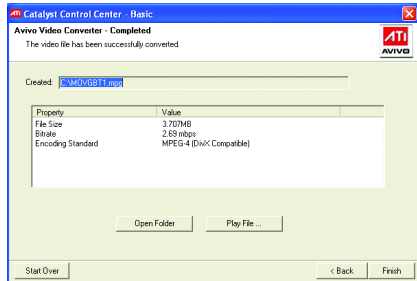
Step 2: Select the video file to be converted.



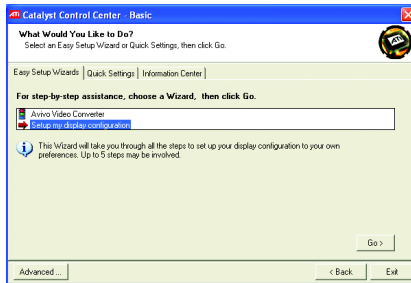
Step 3: In the **Output Folder** area, select the destination folder where the new file will be located. Click **Next**.



Step 4: In the **Output Video Format** list, select a file format for the new file. If you wish to change the name of the new file, enter the new name in the **Output File** area. Finally, click **Next** to start file conversion.



The video file has been successfully converted.

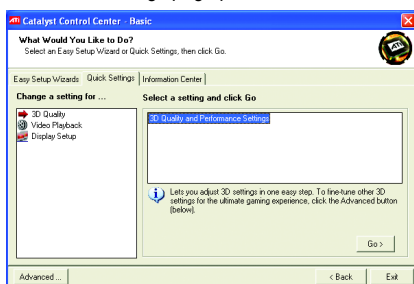


■ Setup my display configuration

This wizard allows you to configure display setting for desktop viewing.

Quick Settings:

The Quick Settings page provide access to three main settings.



■ 3D Quality

3D Performance and Quality settings allows your 3D games and applications to get faster performance and better quality with a more balanced setting.

■ Video Playback

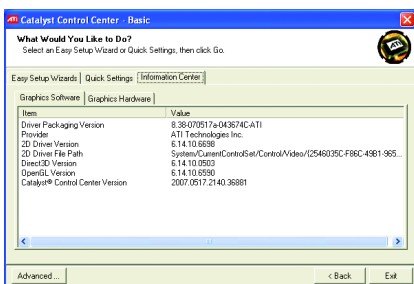
Use this option to optimize video playback in different room environment or to select how video playback appears on the second display.

■ Display Setup

This option allows you to configure your desktop, including changing desktop resolution and desktop mode, setting up extended desktop (requires more than one display), and rotating desktop image to match new display orientation.

Information Center:

The Information Center page in Basic and Advanced View provides hardware and software information about the installed graphics card.



■ Graphics Software

Provides software information including driver version, CATALYST version, Direct 3D version and so on.

■ Graphics Hardware

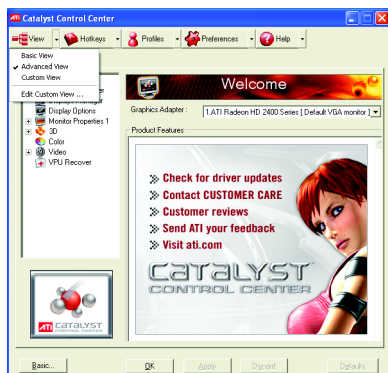
Provides hardware information including graphics chipset, BIOS version, memory size, core clock and so on.

ATI CATALYST™ Control Center Advanced View

The Advanced page allows you to configure all of the many available settings of your ATI graphics card.

View Properties:

The CATALYST Control Center dashboard supports three types of views: Basic View/ Advanced View/ Custom View.



■ Basic View

The Basic view is the default view when CATALYST Control Center is launched for the first time. Refer to the previous pages for details.

■ Advanced View

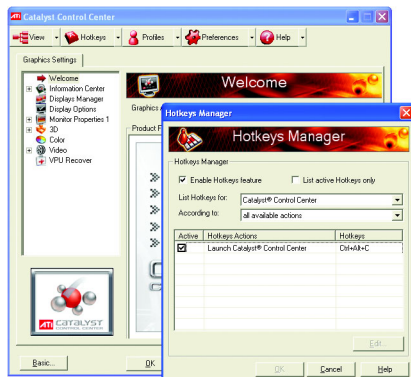
The Advanced view provides access to the advanced features on each page. The left navigation pane displays a tree view that lists all the advanced features. The Advanced view is recommended for experienced users.

■ Custom View

The Custom view allows you to display only the features you choose in the left navigation pane. The Custom view is recommended for experienced users who want to expose only the features they adjust most often or that their 3D application supports.

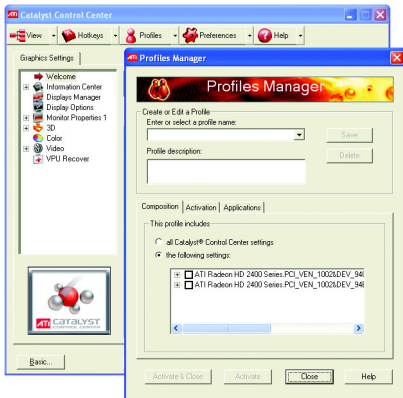
Hotkeys Properties:

The Hotkeys Manager allows you to create shortcut key combinations to quickly perform tasks such as changing a graphics setting or opening an application. A Hotkey is a combination of a modifier key or keys, such as Ctrl, Alt, or Shift, and any letter from the alphabet.



Profiles Properties:

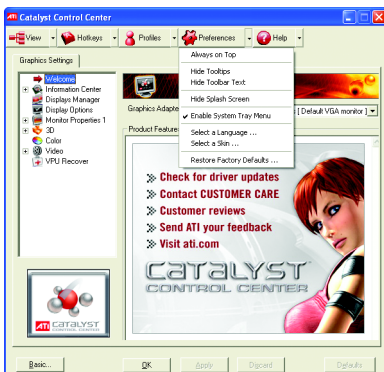
You can use profiles to create customized environments for your desktop, video, and 3D applications. Define and save your own personal video settings that can be quickly activated manually, through a Hotkey, or by file association.



Note: A profile applies to a specific graphics card. If there is more than one graphics card installed in your computer, you need to select the appropriate card before creating, loading, or activating a Profile.

Preferences Properties:

The Preferences page helps to restore defaults, change skins, and update the CATALYST Control Center. The CATALYST Control Center Preferences page contains the following options:

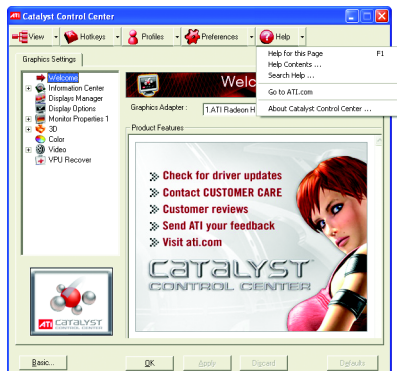


- Always on Top
- Hide Tooltips
- Hide Toolbar Text
- Hide Splash Screen
- Enable System Tray Menu
- Select a Language ...
- Select a Skin ...
- Restore Factory Defaults ...

Help Properties:

The CATALYST Control Center Help feature allows you to access the comprehensive online help, register your product, or generate a problem report should you require technical support.

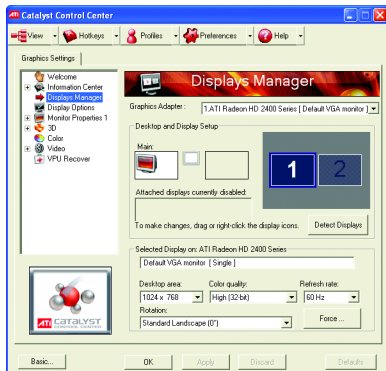
The CATALYST Control Center Help feature offers the following options:



- Help for this Page
- Help Contents ...
- Search Help ...
- Go to ATI.com
- About Catalyst Control Center ...

Displays Manager :

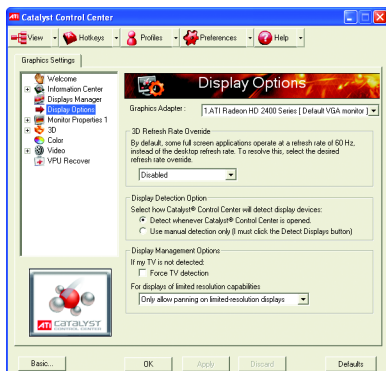
Displays Manager is the central location for configuring your display devices and arranging your desktop. Use Displays Manager to quickly change your display setup, arrange your desktop in a multi-monitor environment, and enable TV Out.



Note: The stretch vertically and horizontally options are not supported on systems running Windows Vista™.

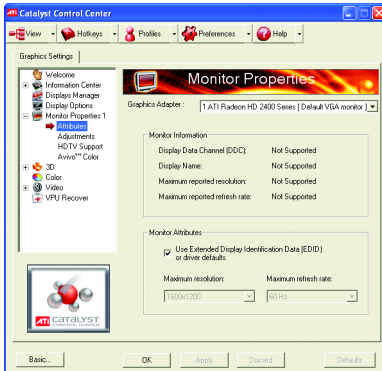
Display Options :

The Display Options aspect gives you additional control to optimize performance of OpenGL® and Direct 3D® applications. Use **3D Refresh Rate Override** to set a refresh rate of your choice when a full-screen application or game has a default refresh rate that is lower than optimal. Choose one of the **Display Detection Options** to prevent screen flicker when detecting a display. If you are using an older TV or one that has non-standard inputs that may not be automatically detected, use **Force TV Detection**.



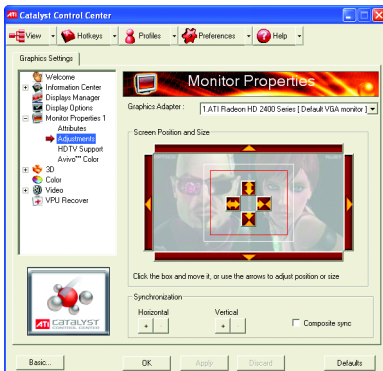
Note: On systems running Windows Vista™ the 3D Refresh Rate Override and the Display Detection Option to configure panning on displays with limited resolution capabilities are not supported since refresh rate is better controlled by Windows Vista™ and Windows Vista™ does not support panning.

Monitor Properties1 :



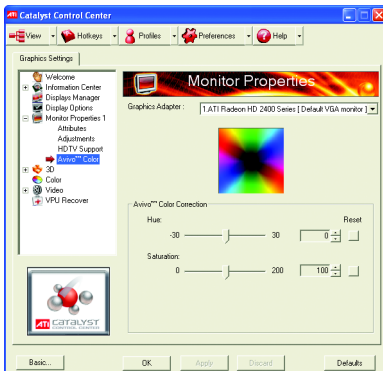
■ Attributes

Monitor Attributes provides information about the attached monitor. You can also enable Extended Display Identification Data. Extended Display Identification Data (EDID) uses the information provided by the attached monitor to determine the limits for the resolution and refresh rate.



■ Adjustments

Use Monitor Adjustments to resize and reposition the computer desktop on your monitor's display screen. You can also adjust the horizontal and vertical sync or enable composite sync.



■ Avivo™ Color

Use Avivo™ Color for ATI graphics cards that supports per-display color settings. Independently set the hue, saturation, and temperature for each attached and enabled display.

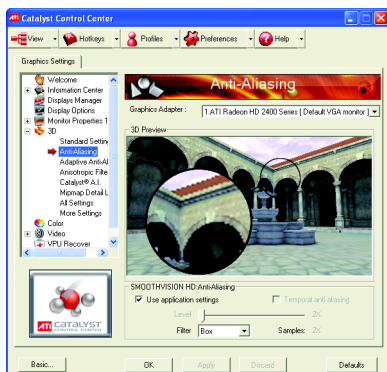
3D :



■ Standard Settings

The Standard Settings page provides access to a universal slider control where you can simultaneously adjust all of the standard 3D settings for any type of 3D application. The slider enables you to adjust for overall system performance, overall 3D image quality, or a balance between the two.

This page is useful when you are not aware of which type of 3D settings your application uses, or when you want to use an overall adjustment control that rapidly configures your application.



■ Anti-Aliasing

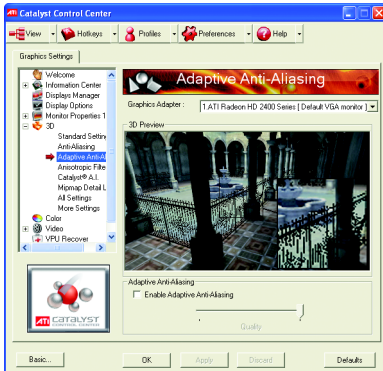
Anti-Aliasing (AA) is a rendering technique designed to remove jagged edges, shimmering, and pixelation problems that are common in rendered 3D images. Rather than determining the color to display for each pixel by sampling a single location at the pixel's center, anti-aliasing samples multiple locations within each pixel and blends the results together to produce the final color.

Anti-Aliasing can be set to favor either system processing performance or image quality, or the application can decide:

Setting for performance is best used when the 3D image is animated and smooth motion is the most important consideration.

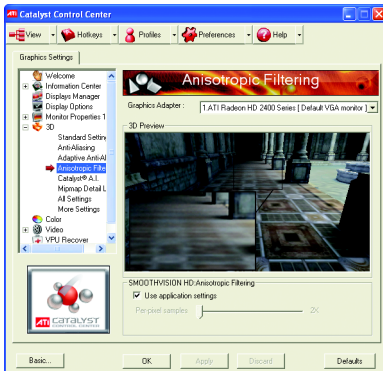
Setting for quality is best used when highly detailed and realistic 3D objects is the most important consideration.

If you are unsure of how to configure anti-aliasing, use the Use application settings option. Your display will automatically adjust to the application's requirements.



■ Adaptive Anti-Aliasing

Adaptive anti-aliasing is a technique that applies a combination of multi-sampling (MSAA) and super-sampling (SSAA) on 3D objects to improve edge smoothness and fine detail. This feature renders 3D objects containing transparencies more realistic, providing exceptional levels of image quality while maintaining performance.



■ Anisotropic Filtering

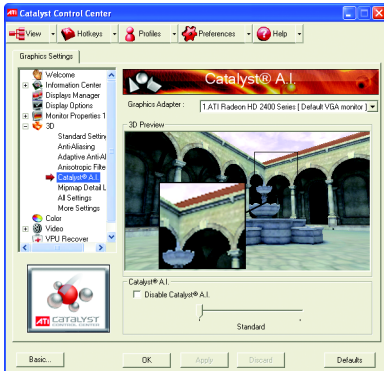
Anisotropic Filtering is a technique that preserves detail on surfaces that have three-dimensional perspective and fade away into the background. It works best when used in conjunction with Mipmapping.

Anisotropic Filtering can be set to favor either an increase in system processing performance or improved image quality:

Setting for performance is best used with applications that display objects with smooth, simple surfaces, like those seen in CAD applications.

Setting for quality is best used with applications that display highly detailed scenes, backgrounds, and textured objects, like those seen in 3D games.

If you are unsure how to configure anisotropic filtering, use the Use application settings option. Your display will automatically adjust to the application's requirements.



■ CATALYST® A.I.

Catalyst® A.I. makes use of ATI's new texture analyzer technology to optimize performance in 3D applications while maintaining or even improving image quality. It analyzes individual textures as they are loaded to determine the best and fastest way to display them.



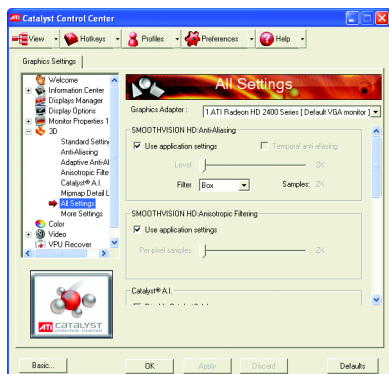
■ Mipmap Detail Level

Mipmapping is a texturing technique that preserves the detail on a 3D object's surface as it moves into the background. A series of low- and high-resolution texture maps are stored in memory and selectively used to create the object's surface, depending on what level of detail is needed.

Mipmap detail level can be set to favor either an increase in system processing performance or improved image quality:

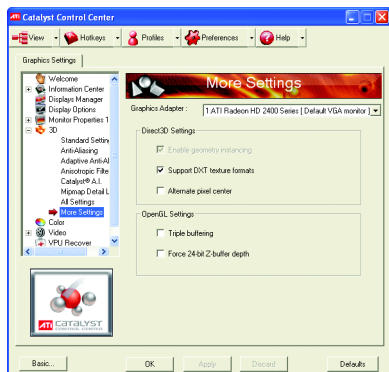
Setting for performance is best used when the 3D image is animated and smoothness of motion is the most important consideration.

Setting for quality is best used when high surface detail is required, especially if the animated object rotates or moves into the background.



■ All Settings

The All Settings page combines all of the principal 3D features onto a single page, without any preview window, allowing for quick access and adjustment. This page is useful when it is not necessary to preview the adjusted settings because the effect is already known or understood.



■ More Settings

Use the More Settings dialog to select settings for the Direct 3D® and OpenGL® Application Programmable Interfaces (API). These settings are provided for resolving certain incompatibilities within 3D applications that use one of these APIs.

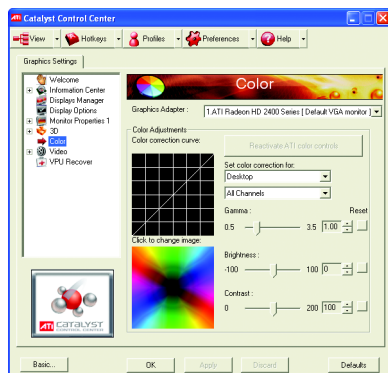
Use this dialog when you are know which type of API (Direct 3D® or OpenGL® your 3D application uses, and you want to select a particular API-specific feature.

If you are not sure which API your 3D application uses, consult the documentation of your 3D application.

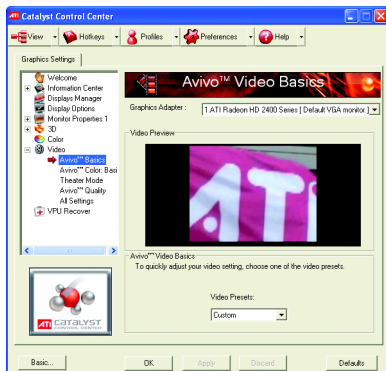
Note: The Alternate Pixel center Direct 3D® setting is not supported on systems running Windows Vista™. This setting corrected a corruption problem that occurred with some older games that should not occur with modern games.

Color :

Adjust the overall richness of color by using the Gamma control. To adjust the overall brightness use the Brightness control, and the overall contrast use the Contrast control.



Video :



■ Avivo™ Basics

To quickly adjust your video settings choose one of the video presets.

Note: These settings will only affect applications with video overlay support.

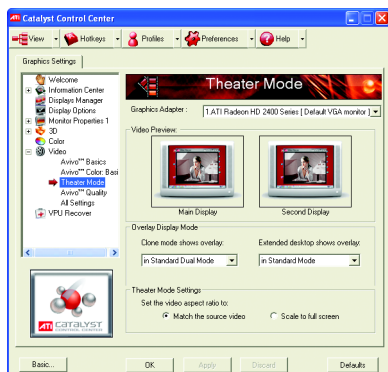


■ Avivo™ Color: Basic

Use the Avivo™ Color: Basic option to manually set Gamma, Brightness, Contrast, Saturation, and Tint for video playback.

Note: Certain video formats do not support these adjustments.

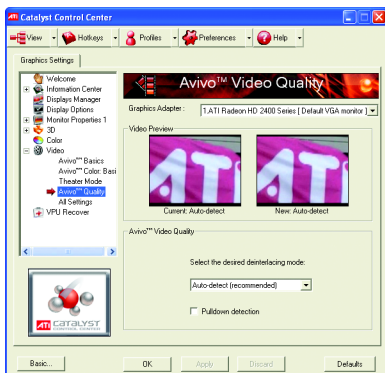
Note: Certain video formats do not support these adjustments. These settings will only affect applications with video overlay support.



■ TheaterMode

Use Theater Mode to change the way you view streaming video.

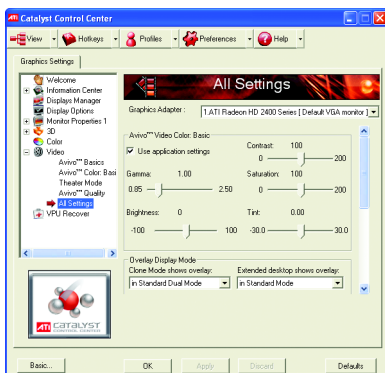
Note: These settings will only affect applications with video overlay support. Extended Desktop Mode is not supported on systems running Windows Vista™.



■ Avivo™ Quality

You can enhance the video quality by choosing one of six options for deinterlacing video. Deinterlacing creates a sharp image from the two video fields of interlaced video.

Note: These settings will only affect applications with video overlay support.



■ All Settings

The All Settings page combines all of the principal Video features onto a single page, without any preview window, allowing quick access and adjustment. This page is useful when it is not necessary to preview the adjusted settings because the effect is already known or understood.

Note: These settings will only affect applications with video overlay support.

VPU Recover :

VPU Recover is a tool capable of detecting the rare situation when the graphics processor is no longer able to respond to display driver commands. When this occurs, VPU Recover attempts to reset the graphics processor so that you are able to continue using your computer without interruption or loss of data. In most cases, VPU Recover will be able to reset the graphics processor without requiring a system restart. If the computer cannot recover from a crash, VPU Recover will switch the computer to software rendering mode, allowing you to save any work in progress before restarting the computer.



- Enable VPU Recover
- Prepare an error report if VPU Recover is activated, for submission to ATI Technologies. Allows the VPU Recover, once it is activated, to generate an error report that you can send to ATI via e-mail.

Note: Because Windows Vista™ provides the same functionality as this option, VPU Recover is not available on systems running Windows Vista™.

4. Troubleshooting Tips

The following troubleshooting tips may help if you experience problems. Contact your dealer or GIGABYTE for more advanced troubleshooting information.

- Check that the card is seated properly in the PCI Express x16 slot.
- Ensure that the display cable is securely fastened to the card's display connector.
- Make sure that the monitor and computer are plugged in and receiving power.
- If necessary, disable any built-in graphics capabilities on your motherboard. For more information, consult your computer's manual or manufacturer.

(NOTE: Some manufacturers do not allow the built-in graphics to be disabled or to become the secondary display.)

- Make sure you selected the appropriate display device and graphics card when you installed the graphics driver.
- Restart your computer. Press the **F8** key on your keyboard after system starts up. When the Windows Advanced Options Menu appears, select Safe Mode and press Enter. After getting into Safe Mode, in Device Manager check whether the driver for the graphics card is correct.
- For more assistance, use the Troubleshooting Guide located in the Windows® Help or contact your computer manufacturer.



If necessary, adjust your monitor's setting by monitor's adjust panel to make the screen looks focused, crisp, and sharp. (Please refer to the monitor's manual.)

5. Appendix

5.1. How to Reflash the BIOS in MS-DOS mode

1. Extract the downloaded Zip file to your hard disk(s) or floppy disk. This procedure assumes drive A.
2. Restart the computer in MS-DOS mode. (For Windows XP, you need a startup disk to restart the computer in MS-DOS mode.)
3. Change the command prompt to A:\>.
4. To back up the current BIOS, at the A:\> prompt, type `[BIOS flash utility name] -s [BIOS file name]` (**example: gvf19 -s rx24p8he.f1**) and press **Enter**.
5. To flash BIOS, at the A:\> prompt, type `[BIOS flash utility name] -p [BIOS file name]` (**example: gvf19 -p rx24p8he.f2**) and press **Enter**.
6. Wait until it's done, then restart your computer.

5.2. Resolutions and Color Depth Table (In Windows® XP)

Radeon™ HD 2400 Pro Series 2D Single Display Modes

Display	Maximum	Color Depth (bpp)		
Screen	Refresh Rate	8bpp(256 color)	16bpp(65K color)	32bpp(16.7M)
Resolution	(Hz)	Standard mode	High mode	True mode
640 x 480	200	✓	✓	✓
800 x 600	200	✓	✓	✓
1024 x 768	200	✓	✓	✓
1152 x 864	100	✓	✓	✓
1280 x 768	85	✓	✓	✓
1280 x 960	160	✓	✓	✓
1280 x 1024	120	✓	✓	✓
1440 x 900	60	✓	✓	✓
1600 x 1200	100	✓	✓	✓
1680 x 1050	100	✓	✓	✓
1792 x 1344	85	✓	✓	✓
1800 x 1440	70	✓	✓	✓
1856 x 1392	75	✓	✓	✓
1920 x 1080	75	✓	✓	✓
1920 x 1200	85	✓	✓	✓
1920 x 1440	75	✓	✓	✓
2048 x 1536	66	✓	✓	✓

Radeon™ HD 2400 Pro Series HDTV Display Modes

	Display	Maximum
	Screen	Refresh Rate
	Resolution	(Hz)
480i	640 x 480	30
	704 x 480	30
	720 x 480	30
480p	640 x 480	60
	704 x 480	60
	720 x 480	60
	856 x 480	60
720p	960 x 720	60
	1280 x 720	60
1080i	1920 x 1080	30

* The table is for reference only. The actual resolutions supported depend on the monitor you use.

Regulatory Statements

Regulatory Notices

This document must not be copied without our written permission, and the contents there of must not be imparted to a third party nor be used for any unauthorized purpose. Contravention will be prosecuted. We believe that the information contained herein was accurate in all respects at the time of printing. GIGABYTE cannot, however, assume any responsibility for errors or omissions in this text. Also note that the information in this document is subject to change without notice and should not be construed as a commitment by GIGABYTE.

Our Commitment to Preserving the Environment

In addition to high-efficiency performance, all GIGABYTE motherboards fulfill European Union regulations for RoHS (Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment) and WEEE (Waste Electrical and Electronic Equipment) environmental directives, as well as most major worldwide safety requirements. To prevent releases of harmful substances into the environment and to maximize the use of our natural resources, GIGABYTE provides the following information on how you can responsibly recycle or reuse most of the materials in your "end of life" product.

Restriction of Hazardous Substances (RoHS) Directive Statement

GIGABYTE products have not intended to add and safe from hazardous substances (Cd, Pb, Hg, Cr+6, PBDE and PBB). The parts and components have been carefully selected to meet RoHS requirement. Moreover, we at GIGABYTE are continuing our efforts to develop products that do not use internationally banned toxic chemicals.

Waste Electrical & Electronic Equipment (WEEE) Directive Statement

GIGABYTE will fulfill the national laws as interpreted from the 2002/96/EC WEEE (Waste Electrical and Electronic Equipment) directive. The WEEE Directive specifies the treatment, collection, recycling and disposal of electric and electronic devices and their components. Under the Directive, used equipment must be marked, collected separately, and disposed of properly.

WEEE Symbol Statement



The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local government office, your household waste disposal service or where you purchased the product for details of environmentally safe recycling.

- When your electrical or electronic equipment is no longer useful to you, "take it back" to your local or regional waste collection administration for recycling.
- If you need further assistance in recycling, reusing in your "end of life" product, you may contact us at the Customer Care number listed in your product's user's manual and we will be glad to help you with your effort.

Finally, we suggest that you practice other environmentally friendly actions by understanding and using the energy-saving features of this product (where applicable), recycling the inner and outer packaging (including shipping containers) this product was delivered in, and by disposing of or recycling used batteries properly. With your help, we can reduce the amount of natural resources needed to produce electrical and electronic equipment, minimize the use of landfills for the disposal of "end of life" products, and generally improve our quality of life by ensuring that potentially hazardous substances are not released into the environment and are disposed of properly.

China Restriction of Hazardous Substances Table

The following table is supplied in compliance with China's Restriction of Hazardous Substances (China RoHS) requirements:



关于符合中国《电子信息产品污染控制管理办法》的声明
Management Methods on Control of Pollution from Electronic Information Products
(China RoHS Declaration)

产品中有毒有害物质或元素名称及含量
Hazardous Substances Table

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substances)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
PCB板 PCB	○	○	○	○	○	○
结构件及风扇 Mechanical parts and Fan	×	○	○	○	○	○
芯片及其他主动零件 Chip and other Active components	×	○	○	○	○	○
连接器 Connectors	×	○	○	○	○	○
被动电子元器件 Passive Components	×	○	○	○	○	○
线材 Cables	○	○	○	○	○	○
焊接金属 Soldering metal	○	○	○	○	○	○
助焊剂, 散热膏, 标签及其他耗材 Flux, Solder Paste, Label and other Consumable Materials	○	○	○	○	○	○
○: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。 Indicates that this hazardous substance contained in all homogenous materials of this part is below the limit requirement SJ/T 11363-2006						
×: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。 Indicates that this hazardous substance contained in at least one of the homogenous materials of this part is above the limit requirement in SJ/T 11363-2006						
对销售之日的所发售产品, 本表显示我公司供应链的电子信息产品可能包含这些物质。注意: 在所售产品中可能会也可能不会含有所有列出的部件。 This table shows where these substances may be found in the supply chain of our electronic information products, as of the date of the sale of the enclosed products. Note that some of the component types listed above may or may not be a part of the enclosed product.						