



Radeon® CrossFire™ Installation Guide

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Documentation Updates

ATI is constantly improving its product and associated documentation. To maximize the value of your ATI product, you should ensure that you have the latest documentation. ATI's documentation contains helpful installation/configuration tips and other valuable feature information.

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CHAPTER 1:

CrossFire™ FAQ

The following is a listing of frequently-asked questions about CrossFire™.

For the latest information, please consult the CrossFire™ Web site at:

ati.com/crossfire

1 What combination of products are required to build a working CrossFire™ system?

Three components are required:

- a CrossFire™ Edition graphics card that works as the Master graphics card.
- a CrossFire™ Ready graphics card from the same brand-family that works as the Slave graphics card.
- a CrossFire™ Ready motherboard (which contains two PCIe™ X16 slots).

More information on the requirements for each of these components can be found within this FAQ.

2 What graphics cards work with CrossFire™?

A CrossFire™ graphics card works with all members of the same brand-family. Thus a Radeon® X850 CrossFire™ Edition can be used as the Master graphics card with any Radeon® X850 product.

3 What motherboards support CrossFire™?

The optimal configuration for a CrossFire™ system is one based on a Radeon® Xpress 200 CrossFire™ Edition motherboard. Motherboards from other manufactures will be certified as CrossFire™ Ready when they become available.

4 Are there specific CMOS motherboard settings for CrossFire™?

On some motherboards, the CMOS may be set by default to support only a single PCI Express® X16 slot. Ensure that both PCIe™ X16 slots are enabled in the CMOS.

5 Which slot does the CrossFire™ Master card go into on the motherboard?

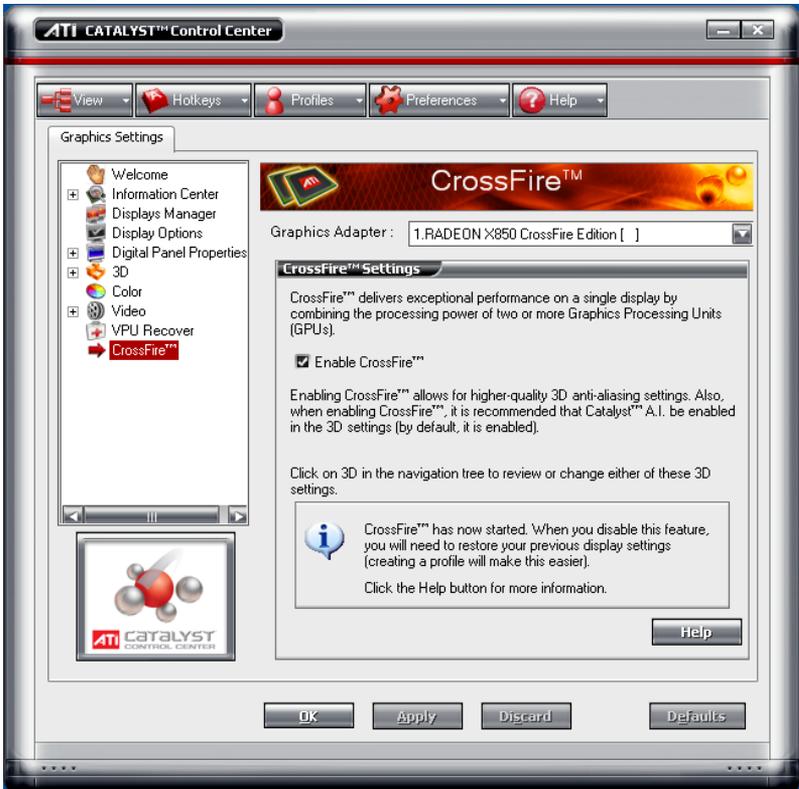
The CrossFire™ Master card must go into the primary PCI Express® slot (slot zero) on the motherboard.

Note: To determine which PCIe™ slot is the primary slot, consult your motherboard manual.

Alternately, to determine whether or not a CrossFire™ Edition card is in the correct slot, connect your display directly to the DVI-I connection on the Master graphics card instead of using the CrossFire™ DMS-59™ connector, with both graphics cards seated in their respective slots on the motherboard. If an image appears on the screen upon boot-up, the card has been placed in the correct slot on the motherboard.

6 Are there any software settings required for CrossFire™ to work?

Yes, there is a setting in the Catalyst™ Control Center that needs to be enabled for CrossFire™ to operate. When all of the hardware and software has been properly set up and installed, the following CrossFire™ aspect appears in Catalyst™ Control Center:



To access and enable CrossFire™ in Catalyst™ Control Center, do the following:

- Click **CrossFire™** in Advanced View. Then, select **Enable CrossFire™**.

When CrossFire™ is successfully enabled, all display devices except the one used by CrossFire™ will be disabled. Multiple monitors/displays that are disabled when CrossFire™ is enabled reappear after CrossFire™ is disabled.

7 What is the difference between a CrossFire™ Edition graphics card and a standard graphics card from the same family?

CrossFire™ Edition graphics cards include a “compositing engine,” a chip that takes the partially rendered image from the Slave graphics card

and merges it with the partially rendered image from the Master graphics card. The result is a complete frame rendered at up to twice the performance of a single graphics card.

8 How are the graphics cards connected on a CrossFire™ system?

The two cards are connected by an external cable. The cable is attached from the Slave graphics card's DVI-I connection to the CrossFire™ Edition's DMS-59™ connection, which is used to convey information from the Slave graphics card to the Master graphics card and transmit the combined signal to a display device.

9 Which games/applications work with CrossFire™?

CrossFire™ works with all 3D games and applications. If Catalyst™ A.I. is enabled in the Catalyst™ Control Center software, the optimal rendering mode available for the application is automatically selected.

10 Is a driver profile required to make CrossFire™ work?

No. CrossFire™ is enabled by default for all 3D games and applications.

11 What happens if you pair a 12-pipeline CrossFire™ Edition graphics card with a CrossFire™ Ready 16-pipeline graphics card?

In this scenario both graphics cards will operate as 12-pipeline graphics cards while in CrossFire™ mode.

12 What happens if the CrossFire™ Edition graphics card and the CrossFire™ Ready graphics card have different clock speeds?

Both cards will continue to operate at their individual clock speeds; neither card is "stepped down." The compositing engine on the CrossFire™ Edition card merges the resulting images independent of the clock speed on either graphics card.

13 What are the rendering modes, and what are their specific advantages?

The following dynamic rendering modes are available:

- SuperTiling - CrossFire™ renders alternate 32x32 pixel squares in a fine-grained checkerboard pattern. This configuration increases image-rendering quality, as each card processes half of the complex 3D objects in the pixel squares.

- Scissor Mode - each graphics card renders up to half of the display, either vertically or horizontally depending on the game or application.
- Alternate Frame Rendering - the two graphics cards are used to render alternate frames of the display. This configuration increases the detail of the 3D objects each card can render, as each card handles half of the total number of frames.
- Super Anti-aliasing - improves image quality by combining the results of full-screen anti-aliasing across two graphics cards in a CrossFire™ configuration. The two graphics cards work on different anti-aliasing patterns within each frame.

The first three features are performance features settings automatically selected by ATI's Catalyst™ Control Center. Super Anti-aliasing is a display quality mode selectable using Catalyst™ Control Center.

14 On what basis are different rendering modes chosen?

When Catalyst™ A.I. is enabled in Catalyst™ Control Center, it determines the optimal rendering mode to use, based on the application or game being used. The default rendering mode is dependant on both the hardware configuration and the application being run; typically it will be either Scissor or SuperTiling mode. If Catalyst™ A.I. is not enabled, any Direct 3D® applications that are running on a system based on graphics cards with 16-pipeline graphics processors will use SuperTiling Mode.

15 What type of performance improvement is expected?

Performance enhancements experienced on a CrossFire™ system depend on the application or game being used. Performance improvements can be increased up to 100%, and the latest graphics-intensive programs will generally see over 80% performance improvement at high resolutions and image-quality modes.

16 How many independent displays can be connected to a CrossFire™ system?

While CrossFire™ is designed for optimal use on a single display, it is possible to drive multiple monitors using a CrossFire™ system when CrossFire™ is not enabled. On a standard CrossFire™ system, it is possible to drive three separate sets of monitors and still have one of those displays as a dedicated CrossFire™ display. If the motherboard

contains an integrated video connection and SurroundView™ is enabled, more displays can be added.

Additional issues are covered in the “Troubleshooting” chapter in the *User's Guide*.

CHAPTER 2:

Welcome to CrossFire™

ATI's CrossFire™ propels gaming PCs with the ultimate multi-GPU consumer graphics solution.

CrossFire™ Overview

This section provides an overview of the main features and configurations for CrossFire™. These topics will be covered in more detail in other chapters of this manual.

Allowable CrossFire™ System Components

The basic requirements of a CrossFire™ system are:

- a CrossFire™ Edition graphics card that works as the Master graphics card.
- a CrossFire™ Ready graphics card from the same brand-family that works as the Slave graphics card.
- a CrossFire™ Ready motherboard.

For an up-to-date listing of CrossFire™ certified motherboards see:

ati.com/crossfire.

CrossFire™ Rendering Modes

A CrossFire™ system has four possible display modes:

- SuperTiling
- Scissor Mode
- Alternate Frame Rendering
- Super Anti-aliasing.

The first three are performance-oriented modes, and Super Anti-aliasing is a quality-oriented mode. Each mode uses a different method for dividing the workload required to render a 3D image across multiple GPUs. Only one mode can be in operation at any given time.

The ATI Catalyst™ display driver will automatically select the best of the three performance modes when a 3D application is started, without requiring user intervention. The user can also choose to improve image quality by selecting the new Super Anti-aliasing modes in the Catalyst™ Control Center.

CHAPTER 3:

Getting Started

Congratulations on the purchase of your CrossFire™ Edition card. We hope that you will enjoy countless hours of trouble-free computing.

System Requirements

Hardware	<ul style="list-style-type: none">• Intel® Pentium® 4 or AMD Athlon®.• 512MB of system memory; 1GB or more for best performance.• A CrossFire™ certified motherboard with two (2) PCI Express® X16 slots and correct PCIe™ chipset driver. Note: The CrossFire™ Edition is a dual-slot solution that may obscure the adjacent slot. (See ati.com/crossfire for a list of CrossFire™ certified motherboards.)• Optical drive for installation software (CD-ROM or DVD-ROM drive).• Specialized PCI Express® 500 watt or greater power supply recommended. Consult your computer system manual to ensure the power supply is designed to accommodate a high-end graphics card with a peak dissipation above 75 watts.
Operating System	<ul style="list-style-type: none">• Windows® XP with Service Pack 2 (SP2).• Windows® XP Professional x64 Edition.
Monitor	<ul style="list-style-type: none">• High-resolution MultiSync or multi-frequency monitors or any other type of VGA monitor.• Digital flat-panel (DFP) displays or digital CRT display.

External Connections

The following connection types are available on the baseplate of your CrossFire™ Edition:

- DVI-I
- DMS-59™

Before You Begin

Before you begin installing your new graphics card, please do the following.

Record Your Serial and Part Numbers

The serial number and 102 part number printed on the graphics card are required for registration. They are located on a sticker on the back of the card.



① Serial number (S/N)

② 102 part number (P/N)

Write these numbers down before installing your new ATI product.

Uninstall Previous Graphics Card Drivers

To ensure the successful installation of your new CrossFire™ Edition card, you must uninstall the drivers for the existing graphics card before removing it from your computer.

To uninstall previous drivers

With your current graphics card still in your computer:

- 1** Close all applications that are currently running.
- 2** Navigate to the **Control Panel** and select **Add/Remove Programs**.
- 3** Select your current graphics card drivers and select **Add/Remove**. The wizard will help you remove your current display drivers.

Note: If the previously installed graphics card has any additional software installed, it should also be removed at this point.

- 4** Restart your system after the drivers have been removed.

CHAPTER 4:

Installing the CrossFire™ Edition Master Graphics Card

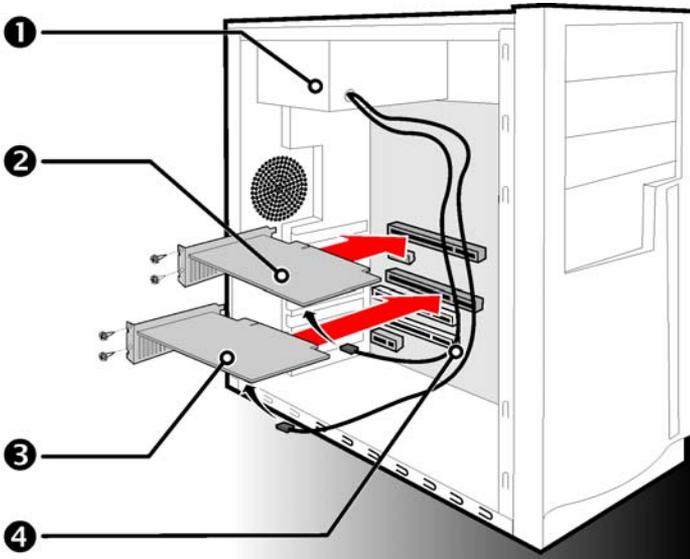
This chapter will guide you through the physical installation of your CrossFire™ Edition graphics card.

The CrossFire™ Edition will always be the Master graphics card due to its on-board compositing engine and the associated DMS-59™ connector. For supported Slave graphics cards, see *Allowable CrossFire™ Display Configurations*.

Installing Master Graphics Cards

The following set of instructions assumes that the PCI Express® Slave graphics card has already been successfully installed in the secondary slot (slot one), and that the primary slot (slot zero) is empty. If you have not already done so, see the user's guide that came with the graphics card for installation instructions.

- ⓘ Consult your system builder or OEM to ensure that your system has an adequate power supply. A 500 watt or greater power supply is recommended. PCI Express® compatible system comes with specialized 12V graphics card power connector. Consult your computer system manual to verify that the power supply is designed to accommodate a high-end graphics card with a peak dissipation above 75 watts.



-
- | | |
|---|--------------|
| 1 | Power Supply |
|---|--------------|
-
- | | |
|---|---|
| 2 | CrossFire™ Edition Graphics Card (Master) |
|---|---|
-
- | | |
|---|---|
| 3 | CrossFire™-Compatible Graphics Card (Slave) |
|---|---|
-
- | | |
|---|---------------|
| 4 | Power Cables. |
|---|---------------|
-

- 1 Turn off the computer, monitor, and other peripheral devices.
- 2 Unplug the computer's power cord and disconnect all cables from the back of your computer.

ⓘ **WARNING** - Wait approximately 20 seconds after unplugging the power cord before disconnecting a peripheral or removing a component from the motherboard to avoid possible damage to the motherboard.

- 3 Remove the computer cover.

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

i **WARNING** - Discharge your body's static electricity by touching the power supply or the metal surface of the computer chassis. Otherwise, you may damage your system.

- 4 Unscrew or unfasten and remove any non-CrossFire™ supported graphics card from your computer.
- 5 Locate the primary (slot 0) PCI Express® slot on the motherboard. If necessary, remove the metal backplate cover from the case housing.

Note: To determine the lowest PCI Express® slot consult your motherboard's manual. For the latest information on the best configuration, consult:

ati.com/crossfire

i **Important** - To ensure proper ventilation for your CrossFire™ Edition graphics card, also remove the metal backplate cover to the adjacent PCI Express® slot.

- 6 Align your CrossFire™ Master card in the slot and press firmly until the card is fully seated.
- 7 Connect the power cable to the 6-pin Molex power connection on the graphics card.
- 8 Screw in or fasten the graphics card securely. Make sure the cables are not interfering with anything inside the computer (for example, a cooling fan) and replace the computer cover.

i **Important** - Ensure that both cards are properly seated and are not in direct contact with each other to prevent either card from overheating.

- 9 Reconnect any cables you have disconnected and plug in the computer's power cord.

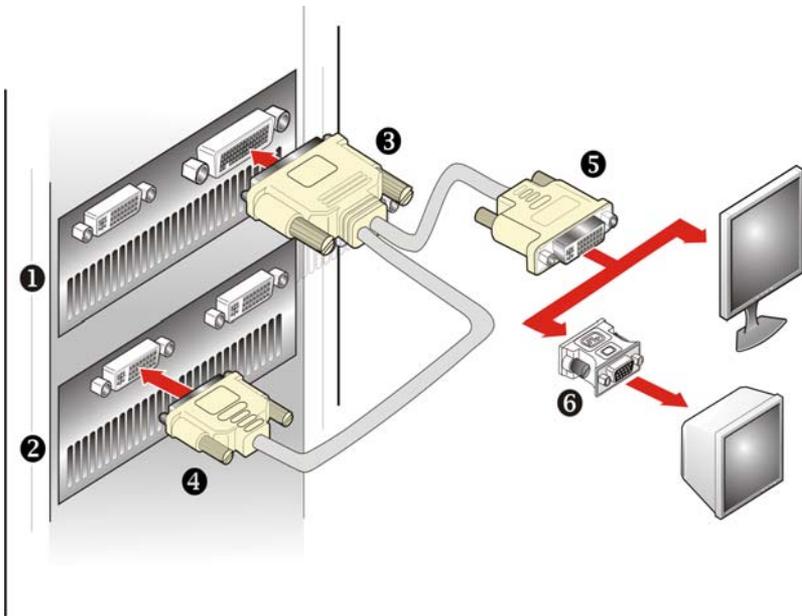
10 Turn on the monitor, and then your computer.

i Your computer will beep, possibly show a warning message on your display, and the boot process will stop if the graphics card is not correctly connected to the power supply.

Connecting devices for CrossFire™

Your CrossFire™ Edition provides hardware support for one DVI-I monitor or one VGA monitor using the supplied DVI-I-to-VGA adapter. It also has a DMS-59™ connector for connection to a supported PCI Express® graphics card for CrossFire™ support. For supported Slave graphics cards see *Allowable CrossFire™ System Components*.

The following illustration shows how to connect your ATI CrossFire™ Edition Master graphics card to your PCI Express® Slave graphics card:



- | | |
|---|--|
| 1 | CrossFire™ Edition Graphics Card (Master) |
| 2 | CrossFire™-Compatible Graphics Card (Slave) |
| 3 | DMS-59™ Connection and CrossFire™ Interconnect Cable |
| 4 | DVI-I Adapter connects to Slave graphics card |
| 5 | DVI-I Adapter connects to display device |
| 6 | DVI-I-to-VGA Adapter to CRT Display (optional) |

Display Configurations

Display support is only available through the CrossFire™ Interconnect cable when CrossFire™ is active. This arrangement ensures the highest possible performance. When CrossFire™ is active other display devices connected to

the other DVI or VGA connections on the Master and Slave graphics cards are rendered inactive.

If additional displays are required when CrossFire™ is active, please use either SurroundView™ (for more information see the SurroundView™ manual) or an additional PCI graphics card.



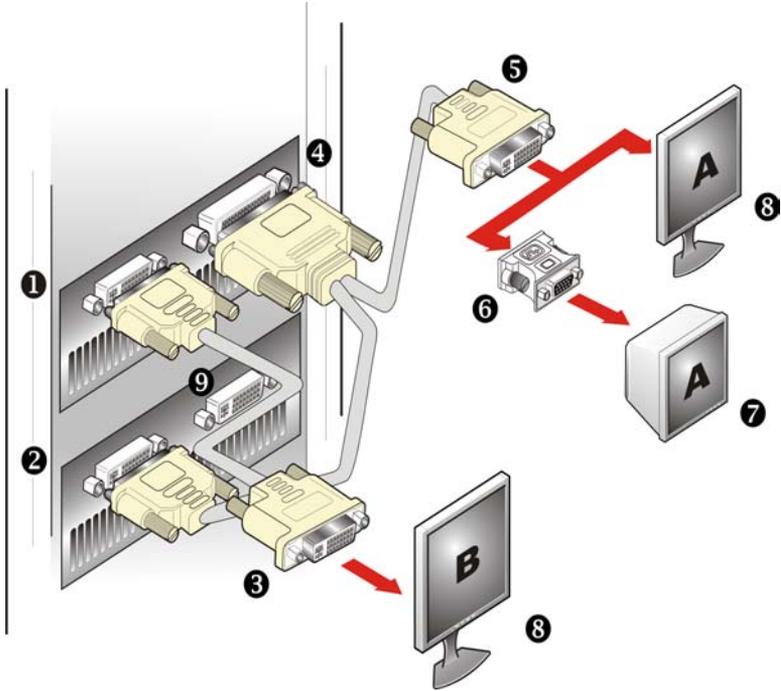
It is highly recommended that the computer be powered down prior to changing the arrangement of display devices attached to the system.

Connecting Your Monitors for Multiple Display

The CrossFire™ Edition can support up to four displays when CrossFire™ is not enabled and when the Master card is not connected to the Slave graphics card. The illustration below shows possible display connections to the CrossFire™ Edition graphics card.

Display devices can also be added to the Slave graphics card. For specific display support information see the user's guide that came with your Slave graphics card.

Note: While two display connections are displayed below, three is possible by attaching an additional display to the unused DVI connection on the Slave graphics card. Up to five displays can be used if your motherboard contains integrated graphics capabilities in conjunction with SurroundView™.



1	CrossFire™ Edition Graphics Card (Master)
2	CrossFire™-Compatible Graphics Card (Slave)
3	DVI-I Connector
4	DMS-59™ CrossFire™ Interconnect Cable
5	DVI-I Connector
6	DVI-I-to-VGA Adapter
7	CRT Display
8	Flat Panel Display
9	DVI-I Connection (can be used to add another display)

The following table shows possible display configurations available when CrossFire™ is *not* enabled.

Connection Type	Display Configuration	Comments
Master Card using DMS-59™ connector and Interconnect cable.	DFP display	DFP - digital flat panel display.
	CRT display using DVI-to-VGA adapter	CRT- cathode ray tube analog display. Single TMDS link mode supported with a maximum pixel refresh rate of 166Mhz.
	Digital HDTV display	If the HDTV display supports the connection type, it can be used as a flat panel display using a DVI-I connector.
Master Card using DVI-I connector	DFP display	DFP - digital flat panel display.
	Digital HDTV display	If the HDTV display supports the connection type, it can be used as a flat panel display using a DVI-I connector.
	Analog HDTV	If the HDTV display supports the connection type, it can be used as a flat panel display using a smart dongle.
	CRT display using DVI-to-VGA adapter	CRT - cathode ray tube analog display.
Slave Card using TMDS DVI-I connector		Connect interconnect cable from DMS-59™ connection of Master Card.

Connection Type	Display Configuration	Comments
Slave Card with two DVI-I connectors	DFP display	DFP - digital flat panel display using non-TMDS connector.
	Digital HDTV	If the HDTV display supports the connection type, it can be used as a flat panel display using a DVI-I connector.
	CRT using DVI-I-to VGA adapter	CRT - cathode ray tube analog display.
	Analog HDTV	Not supported using a smart dongle.
Slave Card with one DVI-I and one Honda connector	VIVO	VIVO functionality is not supported on the Slave graphics card.
	Digital HDTV display	If the HDTV display supports the connection type, it can be used as a flat panel display by connecting the Composite Video inputs to the Honda connector.
Slave Card with one DVI-I and one VGA connector	CRT display	

To connect your monitors

- 1 Power off** your computer and monitors.
- 2 Plug** the monitor cables into their appropriate connectors.
- 3 Power on** your monitors first, and then restart your computer.

Enabling Multiple Displays

Use the Displays Manager of the Catalyst™ Control Center to enable multiple displays. The Displays Manager is available in both Standard and Advanced views of the Catalyst™ Control Center.

Access Displays Manager Standard View

- 1 Click the View** button to switch to Standard View.

- 2 From the Tree Menu pane, click **Displays Manager** to display the settings view.

Enable Displays Manager Advanced View

- 1 Click **View** to switch to Advanced View.
- 2 From the Tree Menu, click **Displays Manager** to display the settings view.

Enable a secondary display device

- 1 Click **Displays Manager** in Advanced View.
- 2 Click the number 2 display icon in the right-hand box.
- 3 Click **Yes** to the **Enable this display** dialog.
 - Optionally, right-click the number 2 icon in the right-hand box and click **Enable** in the pop-up menu.

Note: Repeat steps 2 and 3 above for each additional connected device. The number on the display icon will increase as more displays are added.

CHAPTER 5:

Installing Your Software and Drivers

This chapter will guide you through the installation of the drivers and software associated with your CrossFire™ Edition card.

Windows® New Hardware Found

Windows® may start the **Add New Hardware Wizard** to install the Standard VGA Driver. To correctly install your new hardware:

Cancel the Wizard if you are using Windows® XP, and proceed to **Installing the Catalyst™ Software Suite**.

If the **Add New Hardware Wizard** does not appear, proceed to **Installing the Catalyst™ Software Suite**.

Installing the Catalyst™ Software Suite

ATI's Catalyst™ Software Suite provides software required to enjoy all the features of your ATI graphics card. The Catalyst™ Software Suite has several distinct software elements, including:

- Driver
- Catalyst™ Control Center
- ATI Multimedia Center™
- HydraVision™ (not included in the *Express Install*)
- Remote Wonder™ Software.
- SurroundView™

To install the Catalyst™ software suite

Note: Optical drive refers to a CD-ROM or DVD-ROM drive.

- 1 Insert the ATI Installation CD-ROM into your optical drive.
If Windows® runs the CD-ROM automatically, proceed to step 6.
- 2 Click **Start > Run**.
- 3 Type the following: `D:\ATISSETUP`
(If D is not your optical drive, substitute the correct drive letter.)
- 4 Click **OK**.
- 5 Click **Install** under Software Install.
- 6 Click **Next** and click **Yes** to the license agreement.
- 7 Click **ATI Easy Install** to begin the Installation Wizard.
- 8 Follow the Wizard's on-screen instructions then choose either **Express** or **Custom Install**.

Not all software components are installed using the Express installation. Custom installation allows you to select individual software components for installation.

CHAPTER 6:

Enabling CrossFire™

To take full advantage of running dual graphics cards CrossFire™ needs to be enabled. CrossFire™ is configured in the Catalyst™ Control Center.

Launching Catalyst™ Control Center

Catalyst™ Control Center can be launched from one of the following access points:

- Windows® Start Menu
- Windows® System Tray
- Desktop Shortcuts
- Predefined Hotkeys
- Via an ATI Multimedia Center™ Application.

Launching Catalyst™ Control Center Using the Start Menu

From the Windows® task bar, click **Start**:

- Click to **All Programs > ATI Catalyst™ Control Center > ATI Catalyst™ Control Center**.

Other Quick Launch Access Points

Launching Catalyst™ Control Center Using the System Tray

- 1 Right-click the ATI icon in the Windows® System Tray
- 2 Select Catalyst™ Control Center from the popup menu.

Launching Catalyst™ Control Center Using the Desktop Shortcut

When you first installed Catalyst™ Control Center the setup wizard provided you with the option of placing a shortcut on the desktop.

- Double-click the Catalyst™ Control Center desktop shortcut.

Launching Catalyst™ Control Center Using Hot Keys

- You can press predefined F7 help key or combination of keys such as **Ctrl+Alt+C**, or you can define your hot key by using the Hotkey Manager.

Launching Catalyst™ Control Center from ATI Multimedia Center™

You can also access the Catalyst™ Control Center while an ATI Multimedia Center™ application, like TV Player, is running.

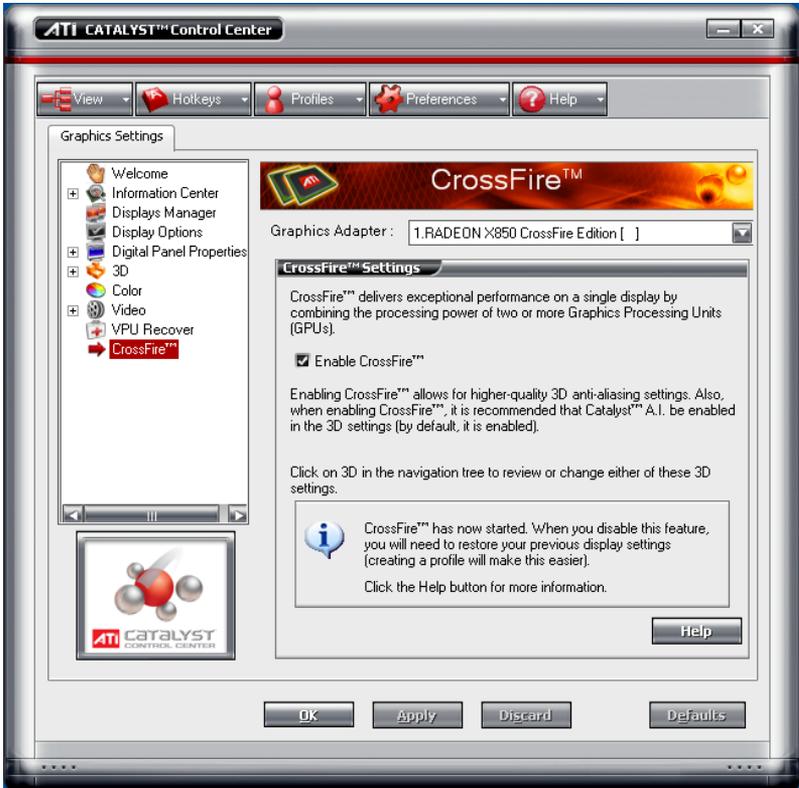
- Click the Catalyst™ Control Center icon in the multi-media application's control panel, if available.

Enable CrossFire™

- 1** Click **CrossFire™** in Advanced View.
- 2** Click **Enable CrossFire™**.

When CrossFire™ is successfully enabled all display devices, except the one used by CrossFire™, will be disabled.

Note: CrossFire™ Higher Quality anti-aliasing can be adjusted in the Catalyst™ Control Center 3D settings aspect.



Catalyst™ Control Center: CrossFire™ is Enabled

MULTI-GPU

Crossfire

-x6-

Crossfire

MULTI-GPU

CHAPTER 7:

Reference

This chapter provides information on troubleshooting, where to get additional accessories, how to register your product, plus warranty and compliance information.

Troubleshooting

The following troubleshooting tips may help if you experience problems. ATI's documentation contains helpful installation/configuration tips and other valuable feature information. Please contact your dealer for more advanced troubleshooting information.

General Troubleshooting

Problem	Possible Solution
Computer Does Not Boot-Up Properly	<ul style="list-style-type: none">• Verify that the installation instructions were properly followed.• If you have problems during start-up, restart your computer in Safe Mode. Check the system configuration utility of your operating system for the interrupt assignments.

General Troubleshooting

Problem	Possible Solution
No Display	<ul style="list-style-type: none"> • Check that the card is seated properly in its expansion slot. • Ensure that the monitor cable is securely fastened to the card. • Make sure that the monitor and computer are plugged in and receiving power. • If necessary, disable any built-in graphics capabilities on your mother board. 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 that you selected the appropriate monitor when you installed your enhanced driver.
Screen Defects Appear	<ul style="list-style-type: none"> • Check if your monitor supports the resolution, horizontal (kHz) and vertical (Hz) refresh rates as required by the graphics card. • Check your current resolution, refresh rate, and color depth settings in the Settings and Monitor tabs in your Display Properties dialog. <p>Warning! Ensure that both video card and monitor support resolution and refresh rates you select. Incompatible resolution/refresh rate selection may result in monitor damage. Refer to your monitor's documentation for recommended resolutions and refresh rates.</p>
Off-Center Screen Image, Odd Colors or No Picture	<ul style="list-style-type: none"> • Try adjusting the brightness, sharpness, contrast, and color balance controls of your monitor. • Try adjusting the centering and positioning controls of your monitor to position the picture on the screen • Set the monitor's RGB inputs (and sync switches, if this option is available) to 75 Ohms, with the sync set to external. • Digital Flat Panel (DFP) monitor users: refer to your monitor's documentation for the appropriate cable and connector to plug into the DVI-I connector on the graphics card.

General Troubleshooting

Problem	Possible Solution
Operating System Warns that Video Card Isn't Properly Configured	<ul style="list-style-type: none">• Check the driver installation and make sure that all software is correctly loaded corresponding to your operating system and applications.• Re-install the ATI drivers for your [ProductName] card.

CrossFire™-Specific Troubleshooting

Problem	Possible Solution
CrossFire™ is Not Functioning	<p>In order for CrossFire™ to function the interconnect cable must be correctly connected to both the Master and Slave graphics cards.</p> <ol style="list-style-type: none">1. Connect the DMS-59™ connector of the interconnect cable to the DMS-59™ connection on the Master card.2. Connect the DVI-I connector of the interconnect cable to the DVI-I connection on the Slave card.3. Connect the remaining DVI-I connector of the interconnect cable to your monitor. <p>On graphics cards with two DVI-I connectors, only one DVI-I connector on the Slave card supports Transition Minimized Differential Signaling (TMDS) required by CrossFire™. If CrossFire™ does not appear in the Catalyst™ Control Center or is not available, try connecting to the second DVI-I connector on the Slave card.</p>
“Before CrossFire™ can be enabled, you need to close the 3D application or video playback that is currently running.”	<p>You will not be able to start CrossFire™ if a 3D application, game, or video playback, such as a DVD movie, is running.</p> <p>Close all open 3D applications, games, and movie player applications then enable CrossFire™.</p>

CrossFire™-Specific Troubleshooting

Problem	Possible Solution
<p>“The CrossFire™ Edition card must be installed on the 1st boot-up slot on your motherboard.”</p>	<p>A message recommending the reversal of graphics card positions appears if the Master graphics card is not installed in the correct PCI Express® slot. Typically, the Master graphics card should be placed in Slot 0 (Slot zero).</p> <p>See your motherboard’s manual to determine the correct CrossFire™ placement of Master and Slave graphics cards for your system.</p>
<p>CrossFire Aspect in Catalyst™ Control Center is Not Displayed</p>	<p>CrossFire™ aspect is only available for the Master graphics adapter. Make certain that the motherboard’s system BIOS has Dual PCIe™ slots enabled. Also make certain that the master and slave graphics cards are in the correct PCIe™ slot. For more information see your motherboard’s manual.</p>
<p>“CrossFire™ Is Currently Unavailable.”</p>	<p>This error is occurred because CrossFire™ did not correctly detect your graphics hardware or their is a problem with the software.</p> <ul style="list-style-type: none"> • Check the graphics card are installed correctly. • Check the interconnect cable is installed correctly. • Close all running 3D applications. • Re-install the Catalyst™ Control Center. <p>For information on installing the software see the Getting Started Guide that came with your graphics card.</p>
<p>“The memory sizes for your CrossFire™ Edition and regular card are mismatched.”</p>	<p>Graphics card with different amounts of memory can be used with CrossFire™. However, restarting your computer is required. This will cause CrossFire™ to reduce the amount of memory being used on the larger card to match the memory size of the smaller card.</p> <p>Clicking OK to the memory mismatch error message will restart your computer.</p> <p>When disabling CrossFire™ you will be given the option to restart your computer to restore the original graphics memory size or continue with the reduced memory size.</p>
<p>Cannot Use ATI Overdrive</p>	<p>ATI Overdrive is not an available feature on CrossFire™ systems.</p>
<p>Screen Rotation Function Does Not Work or is Unavailable</p>	<p>Screen rotation is not an available feature on CrossFire™ systems.</p>

CrossFire™-Specific Troubleshooting

Problem	Possible Solution
Unable to get CrossFire™ to work on a Windows® XP Professional x64 Edition system.	<p>Ensure that the proper drivers for both graphics cards has been properly installed.</p> <p>If both graphics cards have already inserted onto the motherboard, connect a display to the DVI connection of the CrossFire™ Master graphics card and then install the drivers for both graphics cards.</p>
VIVO on Slave Card Does Not Work	<p>If a VIVO (Video In, Video Out) connection is available on the Slave card, its functionality is not supported in this configuration. If the graphics card is moved into the primary PCI Express® slot, VIVO functionality will return.</p>

HDTV/HDTV Adapter Troubleshooting

Problem	Possible Solution
The colors on my TV display are incorrect	<ul style="list-style-type: none"> • Ensure that the connections between the Component Video Adapter and your HDTV are correct (Y=Green, Pb=Blue, Pr=Red).
There is no display on my TV	<ul style="list-style-type: none"> • Your TV will not display anything until Windows starts; this may take several minutes. • Set your TV to YPbPr input. • Ensure that the HDTV Component Video Adapter is properly connected, then restart your computer.
DVDs will not play in 720p or 1080i modes	<ul style="list-style-type: none"> • Copy-protected DVDs restrict playback to 480i and 480p modes.
I can't see the entire display	<ul style="list-style-type: none"> • If your component input device supports it, try 720p mode.
The display appears tilted	<ul style="list-style-type: none"> • Consult your HDTV user's manual.
My CRT display is green	<ul style="list-style-type: none"> • Your system is in component output mode. Restart your computer with the CRT monitor connected.

Product Registration

To activate Customer Care you must register your product with ATI at:

ati.com/online/registration

Customer Care

For detailed instructions on how to use your ATI product, refer to the Online User's Guide included on your ATI installation CD-ROM.

If you require further assistance with your product, the following Customer Care options are available:

Service	Availability	Language	Access
Online or Mail	24/7	English, French, Spanish, Portuguese, German	ati.com or ATI TECHNOLOGIES INC. Attention: Customer Care 1 Commerce Valley Drive East Markham, Ontario Canada L3T 7X6
Telephone US & Canada	9:00AM - 7:00PM EST. Monday to Friday.	English	1-877-284-1566 (toll-free) or 1-905-882-2626 (International and/or local toll charges to Canada will apply).
Telephone Europe and Other Regions	10:30 to 00:00 GMT 10:30 to 19:00 GMT 12:00 to 20:30 GMT	English German- French Spanish- Portuguese	+00800-6677-1111 (toll-free) or +1-905-882-5549 (International and/or local toll charges to Canada will apply)

Service	Availability	Language	Access
Telephone Latin America / South America	7:00AM to 3:30 PM EST	Spanish, Portuguese	+0800-333-5277(Argentina) +0800-891-9068 (Brazil) +001800-514-3276 (Mexico)
	7:00AM to 7:00PM EST	English	other: +1-905-882-3277 (International and/or local toll charges to Canada will apply)

ATI Customer Care will work to resolve your issue and help you to get your ATI product up and running. If your issue is not resolved, our technicians will determine whether the difficulty you are experiencing is the result of the ATI product, whether your product contains a defect, and whether your product is under warranty.

- ATI Customer Care is unable to assist with refunds, returns, or exchange specific inquiries. If resolving the problem being experienced is critical to your decision to keep the product, it is your responsibility to ensure that you know and are within the period of time your reseller will allow for refunds, returns or exchange.
- ATI is not responsible for any expense incurred accessing Customer Care. It is expected that customers will review the expense associated with the available support options and will choose the method that best meets their needs and budget.
- ATI Customer Care reserves the right to limit support options for products that are not registered or are at End of Life.

Getting Additional Accessories

Additional and replacement cables, installation CD-ROMs, manuals, and other accessories for ATI products can be purchased from the online ATI store at:

ati.com/online/accessories

MULTI-GPU

x2

crossfire

x6

crossfire

MULTI-GPU