



AMD Radeon™ HD 6990

User Guide

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Important Safety Instructions

Note: This product is for use only with compatible UL-listed personal computers that have installation instructions detailing user installation of this class of product.

Read all instructions before beginning installation. All safety and installation instructions should be read before the product is installed or operated.

Retain all instructions. Safety, installation, and operating instructions should be retained for future reference.

Heed all warnings. All warnings regarding the product and its operating instructions should be obeyed.

Use appropriate grounding.

Caution:

For continued protection against the risk of electric shock and fire, install this accessory only in products equipped with a three-wire grounding plug, a plug having a third (grounding) pin. This is a safety feature. Do not remove the grounding pin of a three-pin plug.

Attach product securely. All product-securing screws or fasteners should be completely tightened in order to provide continuous bonding between the product and the PC chassis, as appropriate.

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Chapter 1

Getting Started

Before you begin installing your new AMD Radeon HD 6990 graphics card, please make sure you have the proper system requirements and have completed the required preinstallation tasks as outlined in this chapter.

System Requirements

Hardware

Minimum requirements for installing a single AMD Radeon HD 6990 graphics card:

- Motherboard with one PCIe® ×16 lane graphics slot.
- AMD Athlon™ or Intel Pentium® 4 CPU.
- 1 GB RAM.
- CD-ROM or DVD-ROM drive for installing software.
- A 750 watt or better power supply with two 150 watt 8-pin PCIe connectors.
- Certified power supplies are strongly recommended; for a list of certified power supplies, see support.amd.com/us/certified/power-supplies.

AMD CrossFireX™ Requirements

Minimum requirements for installing an additional graphics card for AMD CrossFireX™ configuration:

- AMD CrossFireX-certified motherboard.
- A second AMD CrossFireX graphics card compatible with the AMD Radeon HD 6990 graphics card.
- One AMD CrossFireX internal bridge interconnect per additional board (included).
- A 1000 watt or better power supply with four 150 watt 8-pin PCIe connectors (AMD CrossFireX technology in dual mode).
- Certified system cases with good airflow and cooling are recommended.

For an up-to-date listing of AMD CrossFireX certified components, see sites.amd.com/us/game/products/certified. For more information on installing AMD CrossFireX graphics cards, see [Chapter 6 AMD CrossFireX Technology](#).

Recording the Serial and Part Numbers

Write down the serial number and part number before installing. The serial number and 102 part number on the graphics card are required for registration and free support. They are located on a sticker on the back of the card.

The emphasized numbers in bold are required for registration and free support.

Figure 1-1 Sample Serial and Part Numbers



Uninstalling the Old Driver (Windows® XP)

Follow these steps to uninstall the existing graphics card driver in preparation for installation of a new card.

1. With the current graphics card still in the computer, close all open applications.
2. On the Windows® taskbar, click **Start** ▶ **Control Panel** and then double-click **Add or Remove Programs**.
3. Select the current graphics card driver and then click **Change/Remove**.
Use the wizard that appears to remove the current display driver.
4. Turn off the system after the driver has been removed.

Note: If the previously installed graphics card has any additional software installed, this software may also need to be removed before restarting the computer. For example, DVD Player or Multimedia applications.

Uninstalling the Old Driver (Windows Vista®/Windows® 7)

Follow these steps to uninstall the existing graphics card driver in preparation for installation of a new card.

1. With the current graphics card still in the computer, close all open applications.
2. Click **Start ▶ Control Panel**.
3. Click **Device Manager**. If you are using the Category View of the Control Panel, do one of the following:
 - For Windows Vista®, click **System and Maintenance** and then **Device Manager**.
 - For Windows® 7, click **System and Security** and then **Device Manager** under the **System** group.
4. Expand **Display Adapter** and then right-click the driver for the graphics card you are replacing.
5. In the shortcut menu that appears, click **Uninstall**.
The driver for the old graphics card is uninstalled.
6. Turn off the system.

Chapter 2

Hardware Installation

This chapter details how to install the AMD Radeon HD 6990 graphics card in your system.

Installation Overview

The installation of the card has slightly different procedures depending on whether you are replacing an existing card or installing a graphics card in a PC for the first time. This section briefly describes the high-level steps for both cases.

Replacing an Existing Card

If you are replacing an existing graphics card, you need to:

1. Start the computer and then uninstall the old graphics driver.
2. Turn off the computer and then remove the old card.
3. Install the new card and then connect the monitor.
4. Start the computer and then install the new drivers and software.
5. Restart the computer.

Installing the First Card for this PC

If this is the first graphics card for this PC, you need to:

1. With the computer off, install the new card and then connect the monitor.
2. Start the computer and then install the new drivers and software.
3. Restart the computer.

Configuring Dual-BIOS Support

The AMD Radeon HD 6990 graphics card supports dual-BIOS capabilities. It contains a switch that lets you choose between the factory default BIOS (BIOS1) and a BIOS (BIOS2) that unlocks higher clock speeds and better performance, with additional power requirements.

Caution:

Do not use the BIOS2 setting unless you are familiar with overclocking and are using high-quality system components to ensure maximum system stability. If you encounter issues while using the BIOS2 setting, return the graphics card to the BIOS1 setting, as your system may not be properly equipped to handle the higher clock speeds and power consumption.

The following procedure describes how to switch between BIOS settings using the dual-BIOS switch on your graphics card.

1. Locate the yellow caution sticker adjacent to the AMD CrossFireX™ connectors on your graphics card. This sticker covers the dual-BIOS switch and must be removed to configure the switch.

Before proceeding any further, thoroughly review the documentation for your graphics card and make sure that your computer meets all minimum system requirements.

2. Remove the sticker and set the switch to the desired setting:
 - Position 1—High-performance BIOS (BIOS2).
 - Position 2 (shipping position)—Factory default BIOS (BIOS1).

Your graphics card is now ready to be installed.

Installing the Graphics Card

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

Caution:

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

3. Remove the cover to the computer's case.

Note: If necessary, consult the computer manual for help in removing the cover.

Caution:

Static electricity can seriously damage computer components. Discharge your body's static electricity by touching the power supply or the metal surface of the computer chassis before you touch any components inside the computer's case to avoid damaging them.

4. Unscrew or unfasten and remove any existing graphics card from the computer, if necessary.

5. Locate the appropriate bus slot and, if necessary, remove the corresponding metal backplate cover(s). Make sure all internal cables are clear of the slot.

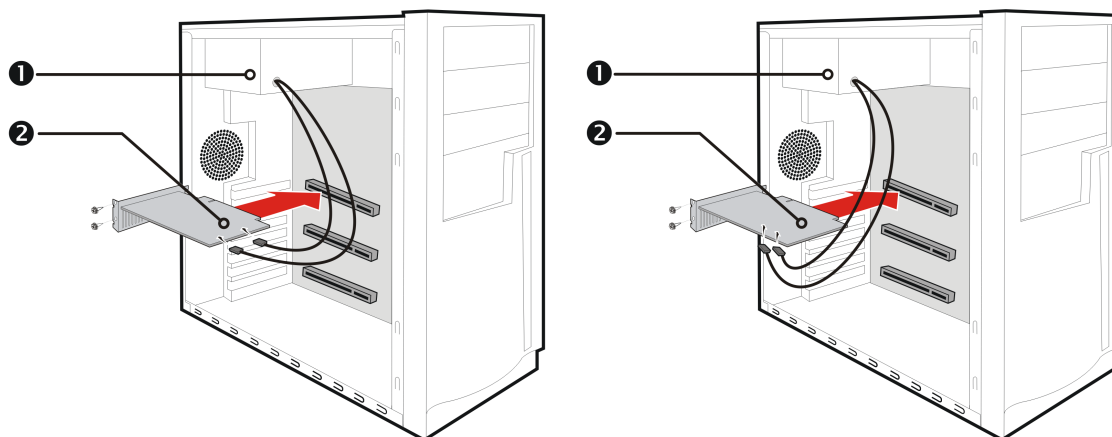
Note: If you cannot find a bus slot to match the card, you need a graphics card with the correct bus to match the motherboard.

6. Align the graphics card with the slot and press it in firmly until the card is fully seated.
7. If your card requires supplementary power and must be connected directly to the power supply, locate the appropriate power connector cable(s) from the power supply and connect it (or them) to the graphics card's supplementary power connector(s).

Note: If applicable, before installing a card that requires a supplementary power connection, make sure your existing power supply has such a connection available.

Tip: The location of power connections may vary between models. They can be located on either the side or back of the card.

Figure 2-1 Possible Power Connection Locations on the Graphics Card



1	Power supply
2	Graphics card

8. Fasten the graphics card securely to the back panel.
9. Make sure no internal cables are interfering with components inside the computer (for example, a cooling fan), and then replace the computer cover.
10. Reconnect any cables you have disconnected during installation, and then plug in the computer's power cord.
11. Turn on the monitor, and then the computer.

If you have properly installed the graphics card, the computer should start normally. Proceed to install the software and drivers for your AMD Radeon HD 6990 graphics card.

Chapter 3

Software Installation

This chapter describes the installation of the software and drivers associated with your AMD Radeon product.

AMD Drivers and Software

Drivers are small but important programs that enable an operating system to communicate with a piece of hardware, such as a graphics card.

When you install a new graphics card, you must also install the driver and configuration software the card requires to function properly.

You also need to install (or reinstall) your AMD Radeon drivers when you have reinstalled or upgraded your operating system or when you download updated drivers from AMD's Web site: support.amd.com/us/gpudownload/Pages/index.aspx.

Note: When reinstalling drivers, always uninstall any previous drivers that are on your system, even if they are for the same graphics card. Always start "fresh."

Installing the AMD Catalyst™ Software Suite (Windows® OS)

To install or remove software, you must have administrator rights or be logged on as a user with administrator rights.

Note: The installation dialog displays in English if the operating system's language is not supported.

Software is provided to both operate and take advantage of all the features of the graphics card. Software includes:

- The graphics card drivers.
- The Control Center software application.
- HydraVision™ software (included in the custom install).
- SurroundView™ software (included in the custom install).
- AMD Video Converter software (included in the custom install).

1. Insert the Software and Documentation CD.

Note: If the install wizard does not start, navigate to the CD drive and double-click ATISSETUP.exe.

2. From the menu that appears, click **Software Install**.
3. Follow the on-screen instructions. When prompted, select either **Express** or **Custom** .

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

Tip: If the installer fails to install the driver, or you have a software conflict, you can download the latest software from support.amd.com/us/gpudownload/Pages/index.aspx and then install it.

Chapter 4

Display Configuration

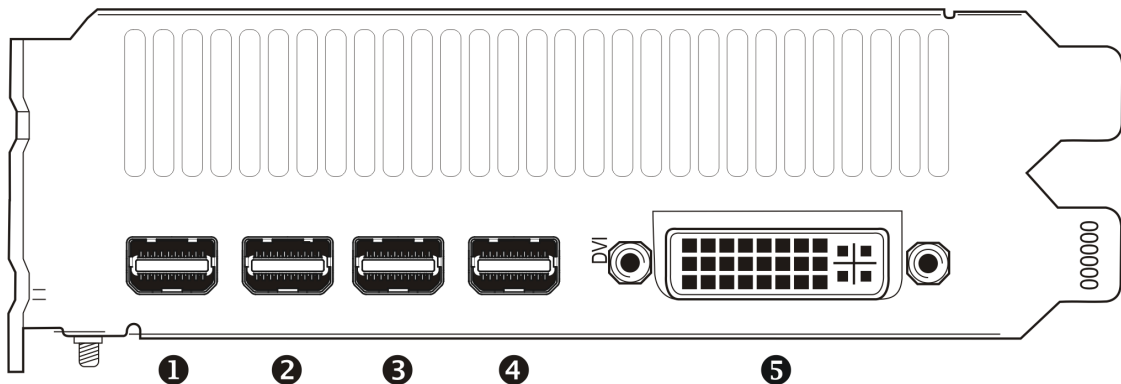
This section describes how to configure the display and lists the available display connections.

AMD Radeon HD 6990 Connections

The following figure shows the display connections available on your AMD Radeon HD 6990 graphics card.

Note: The baseplate may not appear exactly as depicted.

Figure 4-1 AMD Radeon HD 6990 Display Connections



1	Mini DisplayPort (DP+) connection. Carries video and audio signals to DisplayPort-compliant devices.
2	Mini DisplayPort (DP+) connection. Carries video and audio signals to DisplayPort-compliant devices.
3	Mini DisplayPort (DP+) connection. Carries video and audio signals to DisplayPort-compliant devices.
4	Mini DisplayPort (DP+) connection. Carries video and audio signals to DisplayPort-compliant devices.
5	Dual-link DVI-I connection. Provides video digital signals and HDMI™ output that is compatible with most HDMI-compliant devices.

Display Adapters (Optional Accessories)

The following table lists the DisplayPort-compliant adapters/dongles included with your graphics card. They can be used to connect displays not directly supported by the connection types available on the graphics card.

Table 4–1 Display Adapters Included with the AMD Radeon HD 6990 Graphics Card

Adapter/Dongle	Type
Mini DisplayPort-to-DVI (Single Link)	Active dongle
Mini DisplayPort-to-DVI (Single Link)	Passive dongle
Mini DisplayPort-to-HDMI	Passive dongle

DisplayPort adapters come in three types:

- **Adapter**—Uses DisplayPort signals to transmit audio and video information between variants of the same connection type (for example, Mini DisplayPort to standard DisplayPort).
- **Active dongle**—Allows connection from a DisplayPort connection to a non-DisplayPort display using DisplayPort signals.
- **Passive dongle**—Allows connection from a DisplayPort connection to a non-DisplayPort display using non-DisplayPort signals.

Adapters not provided with your graphics card can be purchased directly from AMD's Web site or through your local AMD resellers.

A list of compatible adapters/dongles for your graphics card can be found at: <http://support.amd.com/us/eyefinity/Pages/eyefinity-dongles.aspx>.

Configuration Options

The following table lists options for attaching displays to your graphics card. Only display configurations using the adapters included with your graphics card are mentioned here.

For best graphics performance and quality, always use native connections, when available.

Table 4–2 Display Configurations

Display Configuration	Connection Options
DFP (digital flat-panel) display	<ul style="list-style-type: none"> • DVI connection • Mini DisplayPort connection • Mini DisplayPort connection with Mini DisplayPort-to-DVI adapter (active or passive)
HDMI HDTV	<ul style="list-style-type: none"> • DVI connection with DVI-to-HDMI adapter • Mini DisplayPort connection with Mini DisplayPort-to-HDMI adapter

Once displays are connected to the graphics card, you can control how they are currently configured as well as how Windows® desktops appear on the displays using the Control Center software application. Common configuration tasks include:

- Adding and removing displays
- Rotating displays
- Setting the main (primary) display
- Duplicating and extending desktops
- Arranging desktops

For more information, see [Chapter 5 Using the Control Center Software](#).

Multi-Display Support

Your AMD Radeon HD 6990 graphics card provides display functionality for up to five displays using any combination of the following:

- Up to two passive connections (or one passive connection and one native dual-link DVI connection).
- Any number active or native connections.

More than one display can be connected to a Mini DisplayPort connection using a daisy chain configuration or a hub (via the DisplayPort v1.2 standard).

The following table shows some examples of multi-display configurations; (A) indicates an active adapter is used and (P) indicates a passive adapter is used. Display abbreviations are mDP = Mini DisplayPort, dDVI = dual-link DVI, sDVI = single-link DVI.

Table 4–3 Sample Display Configurations

Sample Display Configuration	mDP Connector	mDP Connector	mDP Connector	mDP Connector	DVI-I Connector	Total Output
mDP, mDP, sDVI, HDMI, dDVI	Native	Native	mDP to sDVI (A)	mDP to HDMI (P)	Native	5
mDP, mDP, mDP, sDVI, VGA	Native	Native	Native	mDP to sDVI (P)	DVI to VGA	5
mDP, sDVI, HDMI, sDVI	Native	mDP to sDVI (A)	mDP to HDMI (P)	mDP to sDVI (P)	-	4
mDP, HDMI, sDVI, VGA	Native	mDP to HDMI (P)	mDP to sDVI (A)	-	DVI to VGA (A)	4
sDVI, HDMI, VGA	-	DP to sDVI (A)	DP to HDMI (P)	-	DVI to VGA (A)	3
mDP, dDVI	-	Native	-	-	Native	2

For additional configuration information, visit <http://www.amd.com/eyefinity>.

Using Adapters

The following procedure describes how to connect a display to your graphics card using an adapter.

1. Turn off your computer and display.
2. Plug the adapter into the connection from your AMD Radeon graphics card and tighten the thumbscrews (if there are any).
3. Connect your display's cable to the adapter and tighten the thumbscrews (if there are any).
4. Turn on your display first, then your computer.

Use the Control Center software application to configure the new display.

Chapter 5

Using the Control Center Software

Control Center Software Overview

The Control Center software application contains settings for configuring and fine-tuning your AMD product. Use it to manage desktops and displays, optimize your graphics processor for enhanced 3D application and video quality, and configure your CPU for improved power savings or system performance. You can also use the performance tools in the application to monitor and manage clock speed and memory use for your graphics card to ensure that your AMD product is configured and running as efficiently as possible.

Note: Feature availability varies between AMD products and operating systems.

The application provides a Standard View for guided configuration and an Advanced View for quick and easy access to all available features and settings. It also provides a search feature for finding specific pages, as well as the ability to bookmark pages by pinning them within the application.

More information on the application and its available features are available through the comprehensive Control Center help system. For information on accessing the help system, see [Viewing the Control Center Help](#).

Starting the Control Center Software

You can use any of the following methods to start the Control Center software application.

Table 5-1 Control Center Access Routes

Access Route	Instructions
Windows® Desktop	<ol style="list-style-type: none">1. Right-click anywhere on the desktop.2. From the shortcut menu that appears, click the Control Center option.
Windows Start Menu	<ol style="list-style-type: none">1. Click Start on the Windows task bar.2. Click All Programs followed by the Control Center option.
Windows Notification Area	<ol style="list-style-type: none">1. Right-click the Control Center icon in the Windows Notification Area.2. From the shortcut menu, click the Control Center option.
Desktop Shortcut	If you chose to create a desktop shortcut to the Control Center application during the driver installation, double-click the shortcut.

Viewing the Control Center Help

The help system that is available with the Control Center software application provides detailed usage information and tips for configuring your AMD product. The help system also provides conceptual information on the technologies that are available for your product.

Use the following steps to access the help system.

1. Open the Control Center application.
2. Choose one of the following options:
 - Set the mouse focus to the application window (by clicking the window) and press F1 on your keyboard.
 - Click the Help button (shown as a question mark) located in the titlebar of each page within the application.
 - Right-click the Control Center icon in the Windows taskbar notification area (system tray), and click **Help**.

The help system opens to provide context-sensitive help for the current page or general usage information.

Chapter 6

AMD CrossFireX™ Technology

Note: These features are only available for AMD Radeon HD 6990 graphics cards with AMD CrossFireX™ connections.

AMD CrossFireX™ Overview

AMD CrossFireX is a multi-GPU (graphics processing unit) performance gaming platform. It enables multiple graphics processors installed in a single computer to work together to improve system performance, creating a high-performance gaming platform. A typical AMD CrossFireX setup involves two graphics cards.

Once your graphics cards have been installed, you can enable and configure AMD CrossFireX support using the Control Center software application. For more information, see the AMD CrossFireX technology Web page at sites.amd.com/us/game/technology/Pages/crossfirex.aspx.

Installing AMD CrossFireX™ Graphics Cards

These instructions assume that a PCIe® graphics card has already been successfully installed in the secondary slot (slot one), and that the primary slot (slot zero) is empty.

Note: Consult your system builder or OEM to ensure that your system has an adequate power supply.

For an up-to-date listing of AMD CrossFire™ certified motherboards and power supplies, see support.amd.com/us/certified/Pages/certified-components.aspx.

1. Make sure the computer, monitor, and other peripheral devices are off.
2. Unplug the computer power cord and disconnect the monitor cable from the back panel of the computer.

Caution:

To avoid possible damage to the motherboard, wait approximately 20 seconds after unplugging the power cord before disconnecting a peripheral or removing a component from the motherboard.

3. Remove the computer cover.

If necessary, consult the computer manual for help removing the cover.

Caution:

Remember to discharge your body's static electricity by touching the power supply case or the metal surface of the computer chassis.

4. Remove any unneeded graphics cards from the computer.

Warning:

Some graphics cards can get hot while operating. Wait approximately five minutes after turning off the computer before touching the card.

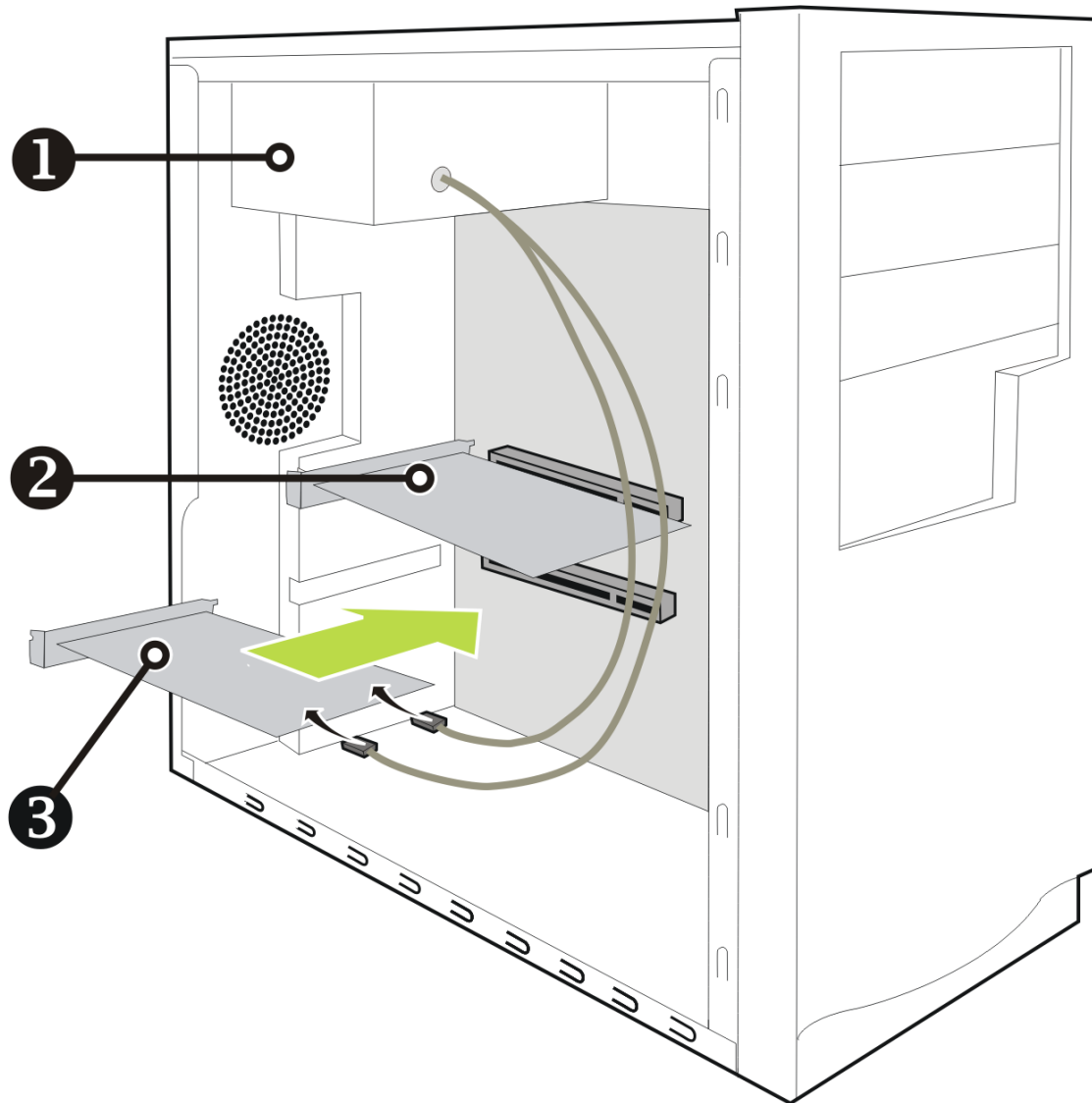
5. Locate the PCIe slots on the motherboard. If necessary, also remove the corresponding back panel cover.
6. Align the new graphics card in the secondary PCIe slot next to the existing graphics card and press firmly until the card is fully seated.

Tip: For optimal performance in a dual-GPU AMD CrossFireX configuration, make sure that each AMD Radeon HD 6990 graphics card is separated by at least one empty expansion slot.

7. Connect the power supply to the cards.

Tip: The location of power connections may vary between models. They can be located on either the side or back of the card.

Figure 6-1 Connecting the Power Cables



1	Power supply
2	Existing card
3	New card

8. Remove protection tags from the ends of the AMD CrossFire interconnect and connect the cards.

Caution:

Always handle the AMD CrossFire bridge interconnect by the connector only. Do not push or pull on the flexible cable.

Figure 6-2 AMD CrossFire™ Bridge Interconnect Protection Tag

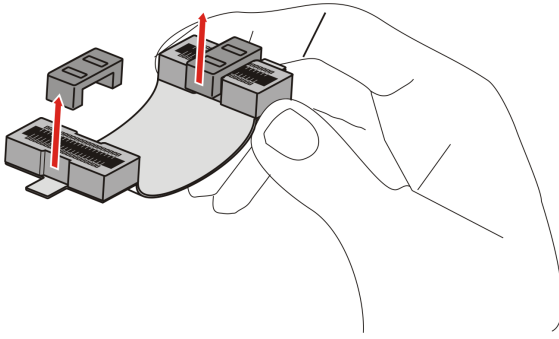
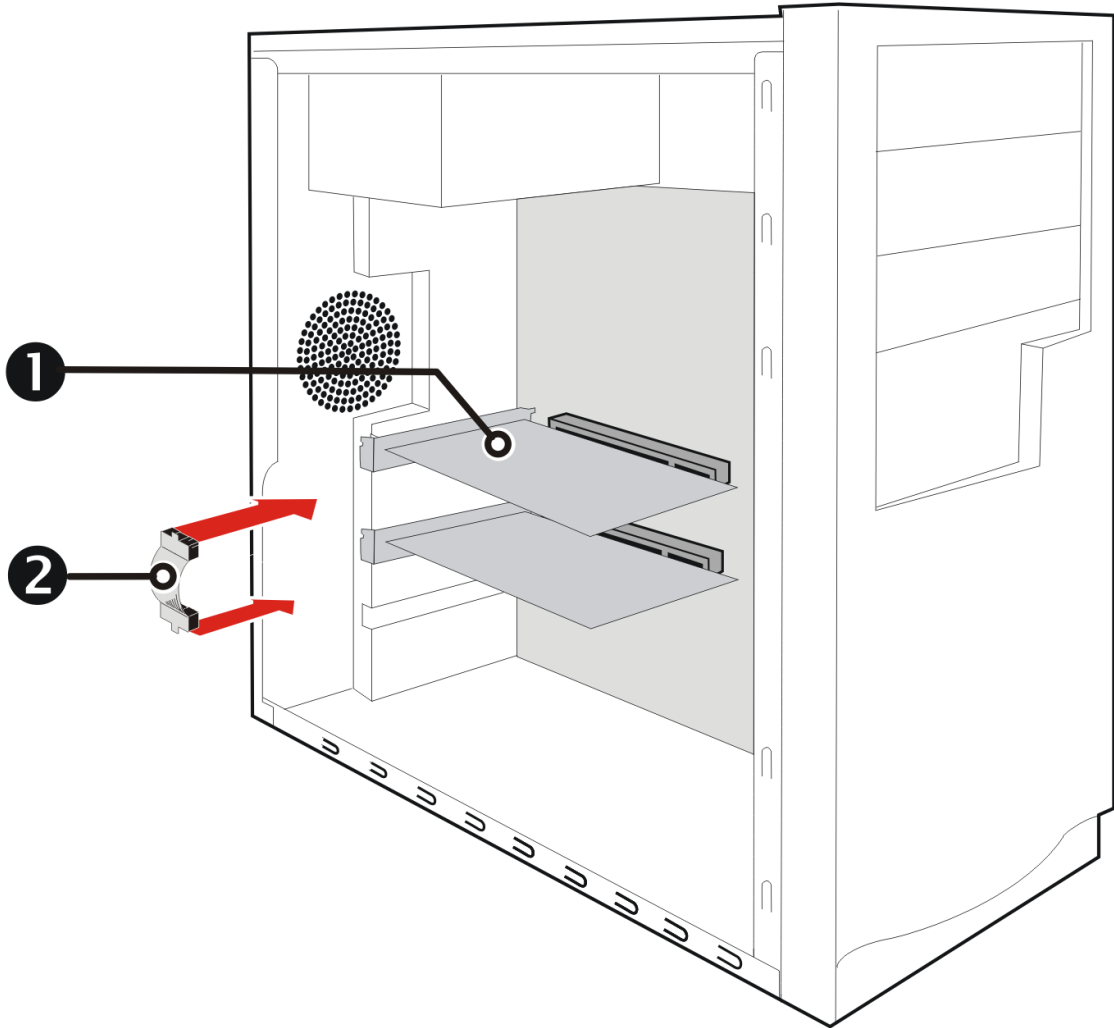


Figure 6-3 AMD CrossFire™ Installation



1	AMD CrossFire graphics cards
2	Interconnect

9. Fasten the graphics cards securely to the back panel.
10. Make sure the cables are not interfering with anything inside the computer (for example, a cooling fan) and then replace the computer cover.
11. Reconnect any cables you have disconnected and plug in the computer power cord.
12. Turn on the monitor and then the computer.

You can now enable and configure AMD CrossFireX support using the Control Center software application. For more information, see [Chapter 5 Using the Control Center Software](#).

Enabling AMD CrossFireX™

When AMD CrossFireX support is enabled, the best possible GPU combination is selected based on the current hardware configuration. If necessary, you can change the existing AMD CrossFireX configuration using the following procedure. For more information, see the help system for the Control Center application.

AMD dual-GPU graphics cards are designed based on AMD CrossFireX technology. As a result, AMD CrossFireX support is always enabled for such cards.

1. Navigate to the **AMD CrossFireX Configuration** page located under the following groups:
 - Standard View—**Performance or Gaming** ▶ **Performance**.
 - Advanced View—**Performance or Gaming**.

If you are using an AMD FirePro™ graphics card, navigate to one of the following pages instead:

- Standard View—**AMD FirePro** ▶ **Graphics Performance** ▶ **AMD CrossFireX Configuration**
 - Advanced View—**AMD FirePro** ▶ **AMD CrossFireX Configuration**
2. From the GPU selection menu at the top of the page, select the desktop associated with the GPU that you want to use as the Display GPU.
 3. Select **Enable CrossFireX**.

Note: The **Choose from the following Rendered GPU combinations** drop-down list automatically populates with all available render GPUs based on the selected display GPU. The list displays only GPUs that can be enabled for AMD CrossFireX. Other combinations are not listed here but may be listed on the **AMD CrossFireX Diagnostics** page.

4. From the list, select the appropriate combination.

Note: If the selected combination is not the most optimal choice for your system, a message appears at the bottom of the page notifying you of this.

5. Click **Apply**.

When AMD CrossFireX is enabled, the GPU Accelerated Physics feature might be automatically disabled for all cards and displays in the configuration except those used by AMD CrossFireX.

Chapter 7

Reference

The following section offers troubleshooting tips and provides customer care, warranty, and compliance information.

Troubleshooting

Note: Some troubleshooting tips may not be applicable depending on the display options supported by and configured for your card.

Graphics Card Installation Troubleshooting

For more advanced troubleshooting information, contact AMD Customer Care at amd.com.

The graphics card doesn't fit any of the motherboard slots.

The graphics card needs to be exchanged for one with a bus that matches the motherboard.

The computer beeps and the boot process stops.

Make certain that the graphics card is properly connected to the internal power supply and the motherboard.

No display on power up.

This may be an SBIOS issue. Replace the old card and then try these possible solutions:

1. Check the motherboard manufacturer's Web site for an SBIOS update.
2. Turn off the on-board video.

The computer does not boot up properly.

Verify that the installation instructions were followed correctly.

Make certain that the graphics card is properly connected to the power supply and the motherboard.

If using Windows® operating system, restart your computer in Safe Mode. For information on Safe Mode, consult the Windows documentation.

Check the system configuration utility for interrupt assignments.

The computer boots up but there is no display.

Verify that the monitor is connected properly to the computer and a power supply.

If a DisplayPort adapter, passive dongle, or active dongle is used, visit www.amd.com/eyefinity and make sure it appears on AMD's listing of AMD Eyefinity Multi-Display Ready or AMD Eyefinity Multi-Display Verified adapters/dongles.

If your motherboard has on-board graphics capabilities, you may need to disable them. Consult your motherboard documentation for more information.

Note: Some manufacturers do not allow the on-board graphics to be disabled or to become the secondary display.

During software installation on a PC with the Windows Vista® OS, the screen goes blank

The software is still installing. Wait 20–30 minutes to make sure the software has finished installing and then restart the computer.

Troubleshooting AMD CrossFireX™

The following are suggested solutions for common AMD CrossFireX™ troubleshooting issues.

Change Motherboard BIOS Settings

Some motherboards may have a system BIOS option to switch between single and dual PCIe slot support. The default setting may be single slot support. Refer to the motherboard's manual for information to enable dual PCIe slot support.

For more information see the AMD CrossFireX Web page at sites.amd.com/us/game/technology/Pages/crossfirex.aspx.

Use Graphics Cards with Different Amounts of Memory

In some AMD CrossFireX configurations, graphics cards with different amounts of memory can be used; however, restarting your computer is required after enabling AMD CrossFireX. This will cause AMD CrossFireX to reduce the amount of memory on the card with the most amount of memory to match the memory size of the graphics card with the least amount of memory.

Clicking **OK** to the memory mismatch error message will restart your computer.

Note: When disabling AMD CrossFireX you will be given the option to restart your computer to restore the original graphics memory size or continue with the reduced memory size.

Card Reversal Recommended

A recommendation message to reverse the graphics card positions may appear if the primary graphics card is not installed into the primary PCIe slot. Although AMD CrossFireX can be enabled, performance may be improved by reversing the graphics cards in the computer.

See your motherboard's manual to determine which is the primary PCIe slot.

3D Client is Active

You will not be able to start AMD CrossFireX if a 3D application, game, or video playback, such as a DVD movie, is running.

Close all open 3D applications, games, and movie player applications, and then enable AMD CrossFireX.

AMD CrossFireX™ is Currently Unavailable

This error has occurred because AMD CrossFireX did not correctly detect your graphics hardware or there is a problem with the software.

- Check that the graphics cards are installed correctly.
- Check that the interconnect cable, if applicable, is installed correctly.
- Close all running 3D applications.
- Check that the AMD CrossFireX mode is set to Software in the Control Center application. (The AMD Radeon HD 6990 can only use AMD CrossFireX technology in software mode.)
- Reinstall the Control Center software application and drivers.

Screen Rotation is Unavailable or Does Not Work

Screen rotation is not an available feature on AMD CrossFireX systems.

Video Displays Flicker During System Startup

This is normal during AMD CrossFireX startup.

AMD CrossFireX™ Disabled After Swapping/Moving Cards

If you change the AMD CrossFireX configuration by moving the graphics cards to different slots on the motherboard, disable AMD CrossFireX and restore factory default settings in the Control Center software application first. Once the cards have been swapped, enable AMD CrossFireX. This ensures the new configuration is detected by the computer.

HDTV/HDTV Adapter Troubleshooting

The following troubleshooting tips may help if you experience problems with HDTV.

More troubleshooting information can be found on the AMD Web site. Please visit amd.com and select **Customer Care**.

The colors on the TV display are incorrect.

Ensure that the connections between the component video adapter and the HDTV are correct.

There is no display on the TV.

The TV will not display anything until Windows starts; this may take several minutes.

Make sure the TV is set to YPbPr input.

Also, make sure that the HDTV component video adapter is properly connected.

DVDs will not play in high-quality modes.

For displays connected using an analog connection, playback of CSS-protected DVDs may be restricted to certain modes.

For displays connected using a digital connection, playback on certain DVD players may also be restricted if HDCP (high-bandwidth content protection) cannot be enabled. This restriction also applies to displays connected using active DisplayPort adapters.

The entire display is not visible.

If the component input device supports it, try 720p mode.

The display appears tilted.

Consult the HDTV documentation.

The CRT display is green.

The system is in component output mode. Restart the computer with only the CRT monitor connected.

TVs/monitors connected cannot be enabled.

If TVs and/or monitors connected using DisplayPort adapters, passive dongles, or active dongles cannot be enabled, visit amd.com/eyefinity to check the connectivity options available for your graphics card and that your chosen configuration is supported.

Check individual connections to the TVs/monitors.

Customer Care

For detailed instructions on how to use your product, refer to the documentation included on the installation CD.

To activate Customer Care, you must register your product at amd.com.

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

Service	Availability	Language	Access
Online or mail	24 hours a day	English, French, Spanish	support.amd.com/us/Pages/AMDSupportHub.aspx or Attention: Customer Care Advanced Micro Devices, Inc., 1 Commerce Valley Drive East, Markham, Ontario, Canada L3T 7X6
Telephone US & Canada	Monday to Thursday: 9:00 a.m. to 5:30 p.m. Friday: 9:00 a.m. to 3:00 p.m. Note: AMD reserves the right to change hours of support.	English	1-877-284-1566 (toll-free) or 1-905-882-2626 (Canada) (International and/or local toll charges to Canada will apply).

AMD Customer Care for Graphics Products will work to resolve your issue and help you to get your 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 product, whether your product contains a defect, and whether your product is under warranty.

- AMD 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.
- AMD 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.
- AMD Customer Care reserves the right to limit support options for products that are not registered or are reaching end of life.

International Compliance Information

This section details the worldwide compliance information for this product, which is manufactured to be compliant in the regions where it is sold.

Caution:

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

FCC Compliance Information (USA)

This product complies with FCC Rules Part 15. Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

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

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The use of shielded cables for connection of the monitor to the graphics card is required to ensure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Complies with FCC 15.107 and 15.109.

For further compliance information:

Advanced Micro Devices, Inc.
62 Forest Street
Marlborough, MA 01752
USA Tel: 508-303-3900

Industry Canada Compliance Statement (Canada)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.

CE Compliance Information (European Union)

EMC Directive 2004/108/EC

CISPR 22:2008-09/EN 55022:2006—Class B: Limits and methods of measurement of radio disturbance characteristics of Information Technology Equipment.

CISPR 24:1997/EN 55024:1998—Information Technology Equipment—Immunity Characteristics—Limits and Methods of Measurements

Electrical Safety

Europe: The Low Voltage Directive—2006/95/EC

- EN 60950-1—Safety of Information Technology Equipment

USA/Canada:

- UL 60950-1 (Information Technology Equipment—Safety—Part 1: General Requirements)
- CSA C22.2 No. 60950-1 (Information Technology Equipment—Safety—Part 1: General Requirements)

To meet UL safety requirements, the computer's maximum room temperature should not exceed 40 °C.

This product complies with the PCI Express 300W Electromechanical Specification — please refer to the manufacturer for additional information. Other relevant input power data will also be available.



Waste Electrical and Electronic Equipment (WEEE) Directive Compliance (European Union)

This product was manufactured by Advanced Micro Devices, Inc.



VCCI Class B ITE Compliance Information (Japan)



この装置は、クラス B 情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

VCCI--B

Korean Certification

B급기기(가정용 방송통신기기)

이 기기는 가정용(B급)으로 전자파적합등록을 한 기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

"Class B" Equipment (Household purpose info/telecommunications equipment)

As this equipment has undergone EMC registration for household purpose, this product can be used in any area including residential area.



BSMI Certification Information (Taiwan)

CNS13438 (96 年版)



C-Tick (Australia and New Zealand)



ACMA – Australian Communications and Media Authority

- Radiocommunications Act 1992 (Australia) – per notices of section 182
- AS/ NZS CISPR 22: 2006

Product Environmental Compliance

This product may carry a marking similar to those below that indicates its level of compliance with China RoHS standards.



For information on China RoHS, EU RoHS, or EU REACH compliance, please refer to [Product Environmental Compliance](#) on the AMD Web site.

