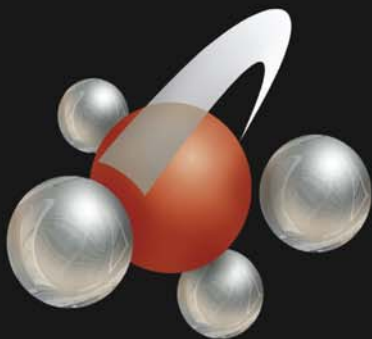


Display Setup Guide



CATALYST[™]
CONTROL CENTER

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Display Setup Tutorial

Welcome to the Display Setup tutorial. Here you will learn how to use the Catalyst™ Control Center to:

- How to connect a second monitor
- How to connect a standard TV
- How to connect your HTDV to your ATI graphics card

First, you will need to start the Catalyst™ Control Center.

Launching Catalyst™ Control Center

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

- Windows Start Menu
- Desktop Shortcuts
- Windows System Tray

Launching Catalyst™ Control Center Using the Start Menu

From the windows task bar, click the **Start** button:

- For Windows XP, point to **All Programs>ATI Catalyst™ Control Center**.
- For Windows 2000, point to **Programs>ATI Catalyst™ Control Center**.

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. If you selected this option, simply double-click the Catalyst™ Control Center desktop shortcut.

Launching Catalyst™ Control Center Using the System Tray

Right-click the **ATI** icon in the Windows® System Tray and select Catalyst™ Control Center from the popup menu.

The Catalyst™ Control Center Wizard

The Catalyst™ Control Center has a wizard that assists you in configuring your display devices. It presenting you with options and suggestions that best suit for your display device.

Launching the Catalyst™ Control Center Wizard

The Catalyst™ Control Center Wizard can be accessed from several locations.

Note: The Setup Wizard is designed to configure up to two display devices.

Launching the Wizard from the Catalyst™ Control Center Displays Manager:

- 1 Click the Dashboard View button and select **Standard View**.
- 2 Click the **Displays Manager** button.
- 3 Click the **Wizard** button.

Launching the Wizard from the Catalyst™ Control Center Video in Standard View:

- 1 Click the Dashboard View button and select **Standard View**.
- 2 Click the **Video** button.
- 3 Click the **Wizard** button.

Launching the Wizard from the Catalyst™ Control Center Video in Advanced View:

- 1 Click the Dashboard View button and select **Advanced View**.
- 2 Expand **Video** in the tree view.
- 3 Select **Standard Settings**.
- 4 Click the **Wizard** button.

Launching the Wizard using a predefined hot key:

The Wizard can be started by using a predefined hot key CTRL+ALT+W.

Note: See the CATALYST™ Control Center online Help for instructions on how to use hot keys.

Enabling a second display

In this tutorial you will learn how to enable a second display.

What you will learn:

- How to connect a second display (monitor) to your graphics card.
- How to enable a second display.
- How to select a different desktop mode.
- How to swap displays.

Connecting A Second Display

First, you need to connect the second display to your graphics card. Your display will determine the type of connection needed to connect to the graphics card.

Possible connector types:

- DVI-I
- VGA
- DVI-I- to-VGA adapter



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Display connectors

Connecting a Display

- To connect a Digital Flat Panel (DFP), use the DVI-I connector (#1) to connect to the DVI-I connection on your graphics card.
- To connect a standard VGA display, use the VGA connector (#2) to connect to the VGA connection on the graphics card.
- To connect a DFP to a VGA connection on your graphics card, use the DVI-I-to-VGA adapter (#3).

Enable your second display using Displays Manager

Now that you have your display devices connected to the graphics card you need to enable the second display in the Catalyst™ Control Center.

If you haven't already done so, turn on your computer and launch the Catalyst™ Control Center using one of the methods described earlier.



Remember: the Catalyst™ Control Center is hot pluggable. This means it is not necessary to turn your computer off. Simply click the Detect Devices button in the Displays Manager to detect any newly connected device.

The Displays Manager is available in both Standard and Advanced View. For our purposes we will make all changes in Advanced View.

Note: Display icons that appear in the Displays Manager can be dragged to enable/disable the device or change configuration settings. Right-click these icons to reveal a pop-up menu of display configuration settings.

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 display icon's number will increase as more displays are added.



Select A Desktop Mode

You can choose to have your desktop set to one of four modes:

- **Clone Mode:** two displays show the identical desktop. Clone mode only supports one color depth, resolution, and refresh rates for both display devices.
- **Stretch horizontally:** the desktop is spread horizontally over two displays. Stretch horizontally mode only supports one color depth, resolution, and refresh rates for both display devices.
- **Stretch vertically:** the desktop is spread vertically over two displays. Stretch vertically mode only supports one color depth, resolution, and refresh rates for both display devices.
- **Extended Mode:** the desktop is spread over two displays that can be arranged independently. Each display can have their own unique resolution, color depth, and refresh rate.

Enable Clone Mode

- 1 Click **Displays Manager** in Advanced View.
- 2 Click and drag the display device icon in Additional Displays to the empty box to the right of the **Main** box.

- 3 Click **Clone Main with [display device]** in the pop-up menu.

Note: Display device can be a CRT, DFP, HDTV, or TV.

Enable Stretch Main Vertically

- 1 Click **Displays Manager** in Advanced View.
- 2 Click and drag the display device icon from Additional Displays to the empty box to the right of the **Main** box.
- 3 Click **Stretch vertically onto [display device]** in the pop-up menu.
- 4 Click **Yes** in the Displays Manager Notification dialog.

Note: Display device can be CRT, DFP, HDTV, or TV.

Enable Stretch Main Horizontally

- 1 Click **Displays Manager** in Advanced View.
- 2 Click and drag the display device icon from Additional Displays to the empty box to the right of the **Main** box.
- 3 Click **Stretch horizontally onto [display device]**.

Note: Display device can be CRT, DFP, HDTV, or TV.

Enable Extended Mode

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

Enabling A Standard TV

In this tutorial you will learn how to enable a standard TV.

What you will learn:

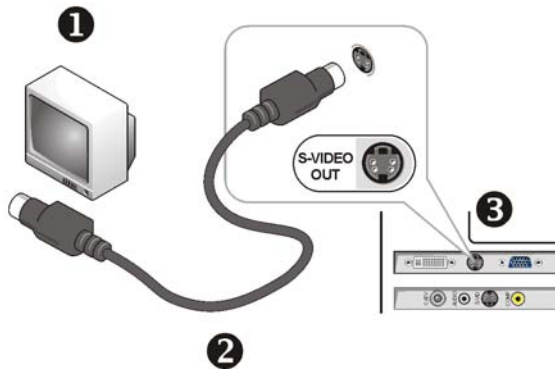
- How to connect a standard TV to your graphics card.
- How to enable a standard TV.
- How to adjust the TV properties.

Connecting a standard TV

Most ATI graphics cards have the capability of outputting your computer's display to your TV. Use the S-Video cable to connect from the graphics card S-Video connector to your TV. You will likely need to add an extension cable in order to reach your TV.

Note: Long extension cables will result in poor image quality. It is recommended the extension cable be no longer than 10 feet.

Connect to the ATI graphics card S-Video connector



Video connections

- 1 Connect the S-Video cable (#2) to the S-Video connector (#3) on your ATI graphics card.
- 2 Connect to your TV (#1) using either a composite or S-Video connection (for more information see your TV's manual).

- 3 Turn on your TV.
- 4 Turn on your computer or click the **Detect Displays** button in the CATALYST™ Control Center Displays Manager in the advanced view.

Enable your second display using Displays Manager

Now that you have your display devices connected to the graphics card you need to enable the second display in the Catalyst™ Control Center.

If you haven't already done so, turn on your computer and launch the Catalyst™ Control Center using one of the methods described earlier.



Remember: the Catalyst™ Control Center is hot pluggable. This means it is not necessary to turn your computer off. Simply click the Detect Devices button in the Displays Manager to detect any newly connected device.

The Displays Manager is available in both Standard and Advanced View. For our purposes we will make all changes in Advanced View.

Note: Display icons that appear in the Displays Manager can be dragged to enable/disable the device or change configuration settings. Right-click these icons to reveal a pop-up menu of display configuration settings.



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 display icon's number will increase as more displays are added.

Force TV detection

Use **Force TV detection** if your TV is not automatically detected by the CATALYST™ Control Center and does not appear in the Displays Manager page. This may be the case if your TV has non-standard inputs.

Note: If **Force TV detection** is required to detect your TV some features that rely on automatic detection, such as extended desktop, will not be supported.

- 1 Click **Display Options** in Advanced View.
- 2 Click **Force TV detection** enables this feature.

Note: This option is not available if the installed graphics card does not support TV Out.

Setting Up TV Properties for HD Signals

The TV Properties focuses on TV image quality, formats, and output adjustments. Located in the Advanced View of the Catalyst™ Control Center, the TV Properties focuses on TV image quality, formats, and adjust the screen position and size.

- Use Image quality for adjust contrast, saturation, and picture sharpness.
- Use Adjustments to enable video, overscan, and determine your TV's display attributes.
- Use Formats to select a TV single format. There are three possible TV single formats:
 - NTSC used in North America
 - PAL used in most of Europe
 - SECAM used mostly in France

Choose the signal appropriate the country you live in. You may wish to change this setting if your TV or VCR complies to a different standard.

Enabling An HDTV

In this tutorial you will learn how to enable an HDTV.

What you will learn:

- How to connect an HDTV to your graphics card.
- How to enable an HDTV.

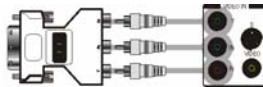
Connect your HDTV to your graphic card

There are three possible ways of connecting your HDTV to your graphics card:

- DVI-I connection
- Component Video connection
- S-Video connection



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HDTV connectors

HDTV Connections

- Use the DVI-I (#1) connection for the best quality video.
- Use Component Video (#2) for good quality video. You will need to use an ATI adapter to connect to either the DVI-I or VGA connection of your graphics card.
- Use S-Video (#3) only if no other option is available.

Enable your second display using Displays Manager

Now that you have your display devices connected to the graphics card you need to enable the second display in the Catalyst™ Control Center.

If you haven't already done so, turn on your computer and launch the

Catalyst™ Control Center using one of the methods described earlier.

Remember: the Catalyst™ Control Center is hot pluggable. This means it is not necessary to turn your computer off. Simply click the Detect Devices button in the Displays Manager to detect any newly connected device.

The Displays Manager is available in both Standard and Advanced View. For our purposes we will make all changes in Advanced View.

Note: Display icons that appear in the Displays Manager can be dragged to enable/disable the device or change configuration settings. Right-click these icons to reveal a pop-up menu of display configuration settings.



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 display icon's number will increase as more displays are added.

Set video aspect ratio

- 1 Expand Video in Advanced View.
- 2 Click **Theater Mode**.
- 3 Select **Match the source video** to maintain the aspect ratio of original video.
 - Optionally, select **Scale to full-screen** to have the source video fill the display area.

Add 1080i mode to the Displays Manager Force button

If the **Predefined and Custom HDTV Formats** list box is empty you can add a format.

- 1 Expand **Digital Panel Properties** in Advanced View.
- 2 Click **HDTV Support**.
- 3 Click **Add 1080i standard format to the Displays Manager**.

WARNING!: This option is only intended for displays that report incomplete or incorrect EDID information. Adding this setting could damage your digital flat panel display. **USE WITH CAUTION!**

Add 720p mode to the Displays Manager Force button

If the **Predefined and Custom HDTV Formats** list box is empty you can add a format.

- 1 Expand **Digital Panel Properties** in Advanced View.
- 2 Click **HDTV Support**.
- 3 Click **Add 720p standard format to the Displays Manager**.

WARNING!: This option is only intended for displays that report incomplete or incorrect EDID information. Adding this setting could damage your digital flat panel display. **USE WITH CAUTION!**

Force changes to a specific display setting

- 1 Click **Displays Manager** in Advanced view.
- 2 Click the **Force** button.
- 3 Move the mouse cursor to select HDTV Mode.
- 4 Move the mouse cursor to highlight, then click, the required setting.

Select a Video Preset

- 1 Click **Video** in Standard View or expand Video in Advanced View.
- 2 In Advanced View, click **Standard Settings**.
- 3 Select a preset from the Video Presets menu.

Congratulations!

You have now completed this tutorial. There are more features for configuring your display device available in the CATALYST™ Control Center. For more information see the CATALYST™ Control Center online Help.

See the Glossary for definitions of terms used in the tutorial.

Glossary

Catalyst™ Control Center

Catalyst™ Control Center is the successor technology to the Catalyst™ software formerly available only through the Windows® Control Panel. It has a new user interface, providing a more interactive means of controlling such things as 2D and 3D performance while providing immediate feedback using a more intuitive graphical user interface.

Component Video

Typically used on DVD players and HDTV systems, component video is a standard Red/Green/Blue (RGB) color signal for televisions. The signal is split and compressed into separate luminance and color values—luminance (“Y”), red minus luminance (R-Y), and blue minus luminance (B-Y). The value for green is not transmitted. The display device automatically “fills in” the color values that are not red or blue. DVDs are encoded using component video, so display devices will provide enhanced playback when this type of connection is used. A common variant of this format used in North America is YPbPr.

Composite Video

Composite video is a type of analog video signal that combines both brightness and color information into a single signal. It typically uses a single RCA connection for the video channel, and separate RCA connections for the left and right audio channels. The quality of the video signal is reduced by the process of mixing the brightness and multiple color channels together into a single channel. For this reason it is inferior in signal quality than either S-Video or component video. Composite video is the broadcast format for analog television signals worldwide, and connections are typically available on VCRs, DVD players and video games.

CRT

Acronym for “cathode ray tube,” which is the main component of computer monitors and TVs. Color CRTs use three separate electron beams fired through a shadow mask and onto the back of the glass screen. The electron

beams activate separate red, green, and blue values in various strengths in order to produce a colored image.

DVI

Acronym for “Digital Video Interface,” a standard video connection used on many current computer displays. There are three types of DVI connections: DVI-A (analog), DVI-D (digital), and DVI-I (integrated, capable of either analog or digital). It supports high-bandwidth video signals over 160 Hz, so it is most often used for high-resolution displays.

HDTV

Acronym for “High Definition Television,” a format that produces much greater picture quality than a standard television, and in a wide-screen format that matches that of a movie theater screen. The two most popular formats are 1080i and 720p, where the number represents how many horizontal scan lines they have, and the following letter represents whether the picture is interlaced, or the product of progressive scanning technology. Interlaced displays paint the odd-numbered scan lines and then the even-numbered lines to produce a picture, whereas progressive scan paints all of the scan lines at once. Both formats use an aspect ratio of 16:9. In contrast, standard North American television signals are displayed using 480 interlaced (480i) scan lines with a more square aspect ratio of 4:3.

NTSC

The name for the type of analog television signal used throughout the Americas (except Brazil) and in Japan. It draws a total of 525 vertical interlaced frames of video at a refresh rate of 60 Hz, making it relatively flicker-free. The acronym refers to the National Television Systems Committee, which devised this color video standard in 1953.

PAL

An acronym for “Phase Alternating Line”, the name for a video broadcast standard used in much of Europe (except France), most of Asia, the Middle-East, Africa and Australia. It draws a total of 625 vertical interlaced frames of video at a refresh rate of 25 Hz.

SECAM

An analog color video signal that originated in France, and is used in many other countries, including (but not limited to) much of Eastern Europe, parts of the Middle East and Asia. Like the PAL video standard, SECAM also draws a total of 625 vertical interlaced frames of video at a refresh rate of 25Hz, but uses a fundamentally different way of encoding its colors. The name is an acronym for “Séquential Couleur avec Mémoire,” which is French for “sequential color with memory.”

S-Video

Short for “Separate Video,” S-Video is a type of analog video interface that produces a higher-quality signal compared to composite video. The signal is split into two separate channels— luminance (Y) and chrominance (C). Sometimes referred to as “Y/C video” or “Y/C”, the connectors typically contain 4-pins within a single connection housing and are commonly found on consumer DVD players, video tape recorders, game consoles, and related devices.

VGA Connector

A type of graphics connector, sometimes also called an analog connector. It is the most common type of video connector available, consisting 15-pins set in three rows. The “VGA” is an acronym for “Video Graphics Array,” which is also the name for the video resolution mode of 640x480 pixels, the lowest standard resolution supported by virtually all video cards.

YPbPr

A type of analog composite video signal that splits and compresses the standard Red/Green/Blue (RGB) colors of a television signal into separate luminance and color values. The “Y” stands for the luminance channel, while “Pb” and “Pr” represent the blue and red channels respectively, both of which have the luminance value subtracted from them. It is an equivalent color space to the chrominance-based YCbCr, which is used for digital video.