

AMD VHDCI 7758D Multi Display graphics

User's Manual

Rev. 1.0A

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1. Introduction

1.0 Features:

- Based on PCI Express 3.0, ATI Radeon™ HD 7750 GCN Architecture GPU.
- 128-bit memory bandwidth 1GB GDDR5 @1125Mhz clock speed.
- Supports 8 x SL DVIs monitors @1920 x 1080 resolution per monitor.
- Fully DirectX® 11 compliant.
- OpenGL 4.2 support and Linux O/S supported.
- Image quality enhancement technology supports 24x multi-sample, super-sample anti-aliasing modes, adaptive anti-aliasing (MLAA), 16x angle independent anisotropic texture filtering and 128-bit floating point HDR rendering.
- Supports AMD Eyefinity multi-display technology up to 6 displays supported.
- Supports up to 8 x DVI displays in Windows extend or clone mode.
- With Independent resolutions, refresh rates, color controls, and video overlays
- Display grouping combine multiple displays to behave like a single large display
- AMD App Acceleration is a set of technologies designed to improve video quality and enhance application performance. Full enablement of some features requires support for OpenCL™, DirectCompute or DirectX® Video Acceleration (DXVA).
- AMD Catalyst™ graphics and HD video configuration software
- Software support for Windows 7, Windows Vista and Linux
- AMD Catalyst™ Control Center - AMD Catalyst™ software application and user interface for setup, configuration, and accessing features of AMD Radeon products.

The GCN Architecture and its associated features (PCI Express® 3.0, AMD ZeroCore Power technology, DDM Audio, and 28nm production) are exclusive to the AMD Radeon™ HD 7750. With the AMD Radeon™ HD 7750's DirectX® 11 tessellation capabilities, you are able to increase visual details and special effects within your games and applications without a noticeable decrease in performance. ATI's graphics accelerators are the most advanced on the market today. They improve the performance of your system and display exceptional graphics and comprehensive award-winning software utilities designed to make you more productive. Please read this guide before attempting to install your card.

1.1 Minimum System Requirements

• Hardware

- Intel® Core 2 / Core 4 or AMD Athlon / Phenom / Latest CPUs
- Minimum 4 or 8GB or more of system memory.
- Optical drive for software installation (CD-ROM or DVD-ROM drive required)
- 450 watts (or greater) Power Supply recommended.
- Use of 3 or more displays of same resolution with AMD Eyefinity Technology is required.
- Recommend to install same 1920 x 1080 resolution DVIs monitors / HDMI TVs for correct detection for display configuration.
- PCI Express® based PC is required with one X16 lane graphics slot available on the motherboard
- Windows Vista® or Windows® 7 operating system. 64-bit operating system highly recommended. Windows® XP not currently supported.
- Installation software requires CD-ROM drive, a keyboard, a mouse and Display monitor.

Note : For setting of Eyefinity mode 2x3 or 3x2 resolution, it is recommend to connect only same 6 x DVI monitors of same resolution to avoid wrong detection which causes conflict in the setting. If there is conflict in the installation, disconnect the monitor and re-install the display mode as "extend mode".

• Operating System

- Windows® 7
- Windows® Vista
- Linux (REDHAT/Ubuntu Linux/SUSE Multi-Displays O/S)

2.1. Hardware Installation

Step 1.

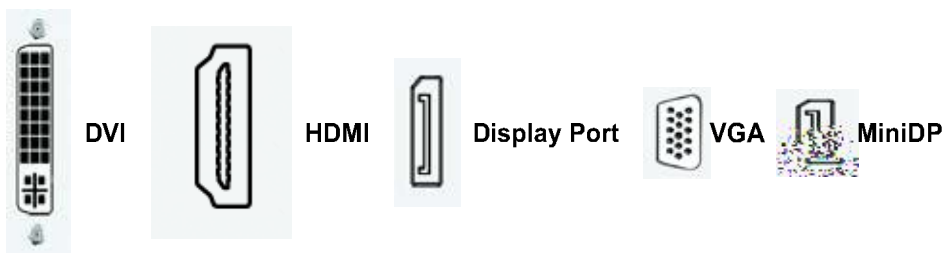
Make sure that the AC power input is disconnected to prevent power surge remains in the capacitors components on the system which may damage the graphics card when inserting in the system board expansion slot. Locate the PCI Express x16 slot. If necessary, remove the metal cover from this slot; then align your graphics card with the PCI Express x16 slot, and press it in firmly until the card is fully-seated.

Step 2.

Replace the screw to fasten the card in place, and replace the computer cover. Make sure that the gold edge connector of the graphics card is securely inserted.

Step 3.

Plug the display cable into your card; then turn on the computer and monitor. To connect a flat panel display to your graphics card, use the DVI-I connector. To connect an HDMI monitor to your graphic card, use the HDMI connector. To connect a Display Port (DP) monitor to your graphics card, use the Display Port connector. You are now ready to proceed with the installation of the graphics card driver. Please refer to next chapter for detailed instructions.



Note : AMD Graphics Accelerator support HDMI output which can handle both audio and video signals. However, audio output from the onboard audio controller or the external sound card will be disabled when HDMI output is activated.

If no need for HDMI output function, set the onboard audio controller or the external sound card to be the default Sound Playback device to obtain audio output from your system.

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

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

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

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

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

Note :

DO NOT APPLY POWER TO YOUR SYSTEM IF THE GRAPHICS CARD IS DAMAGED. In order to ensure that your graphics card can work correctly, please use official Display Drivers only. Using non-official GXore display drivers might cause problem(s) on the graphics card

Uninstall Old Graphics Drivers

To ensure successful installation of the graphics card driver, uninstall the graphic drivers for the existing graphics card before removing the graphics card from the computer.

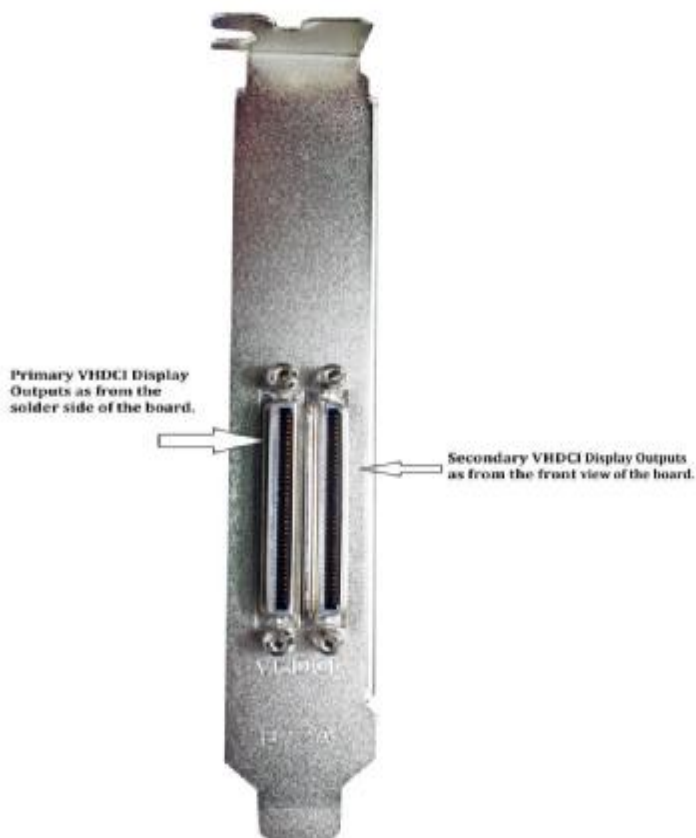
1. With the current graphics card still in the computer, close all open applications.
2. From Control Panel, double-click **Programs and Features**, and select the graphics card driver from the list of software programs.
3. Click **Uninstall**.
4. If the **Programs and Features** uninstall confirmation dialog appears, click **Yes**.

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

5. Turn off the system after removing the drivers.

Important Notice :

For Initial Setup of the Display configuration, connect to the Primary VHDCI cable output to the first 1 ~ 4 DVI monitors for system O/S installation before connecting and setting of the Secondary VHDCI cable output to the next 5 ~ 8 monitors @3840 x 1080 resolution with pair 1920 x 1080 monitors. Incorrect installation of this process may render the display in wrong order of the DVI monitors and configuration.



3. Software Installation

Notice the following guidelines before installing the drivers:

1. First make sure your system has installed DirectX 9 or later version.
2. Make sure your system has installed the appropriate motherboard drivers (for the motherboard drivers, please contact the motherboard manufacturer.)

3.1. Driver and Utility Installation

3.1.1. Driver Installation

After installing the operating system, insert the driver disk into your optical drive. The driver Autorun screen is automatically displayed which looks like that shown in the screen shot below. (If the driver Autorun screen does not appear automatically, go to My Computer, double-click the optical drive and execute the **setup.exe** program.)



1. Select the display language and then click Next



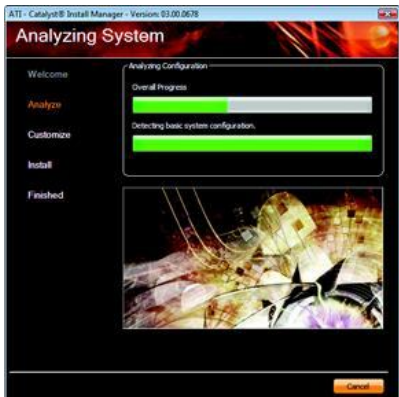
2. Click the Install button



3. Click the Express or Custom icon and then click Next



4. Click the Accept button.



5. The system is installing the components.



6. Click the Finish button to restart the computer. Then the driver installation is done.

Preparing Your Computer

Turn off the power to your system and discharge your body's static electric charge by touching a grounded surface — e.g., the metal surface of the power supply — before performing any hardware procedure.

The manufacturer assumes no liability for any damage, caused directly or indirectly, by improper installation of any components by unauthorized service personnel. If you do not feel comfortable performing the installation, consult a qualified computer technician.

Damage to system components, the accelerator card, and injury to yourself may result if power is applied during installation.

Installing Your ATI Graphics Accelerator Card

1. Shut down the computer, then turn off the power supply and any attached equipment (such as a monitor).
2. Open the computer and locate the x16 PCI Express slot.
3. Remove the cover for that slot from the computer chassis.
4. Place the ATI board into that slot and screw the board in.
5. Replace the computer cover.
6. Place the VGA monitor cable into the ATI Card.

Uninstall Old Graphics Drivers

To ensure successful installation of the graphics card driver, uninstall the graphic drivers for the existing graphics card before removing the graphics card from the computer.

1. With the current graphics card still in the computer, close all open applications.
2. From Control Panel, double-click **Programs and Features**, and select the graphics card driver from the list of software programs.
3. Click **Uninstall**.
4. If the **Programs and Features** uninstall confirmation dialog appears, click **Yes**.

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

5. Turn off the system after removing the drivers.

AMD Eyefinity setting:



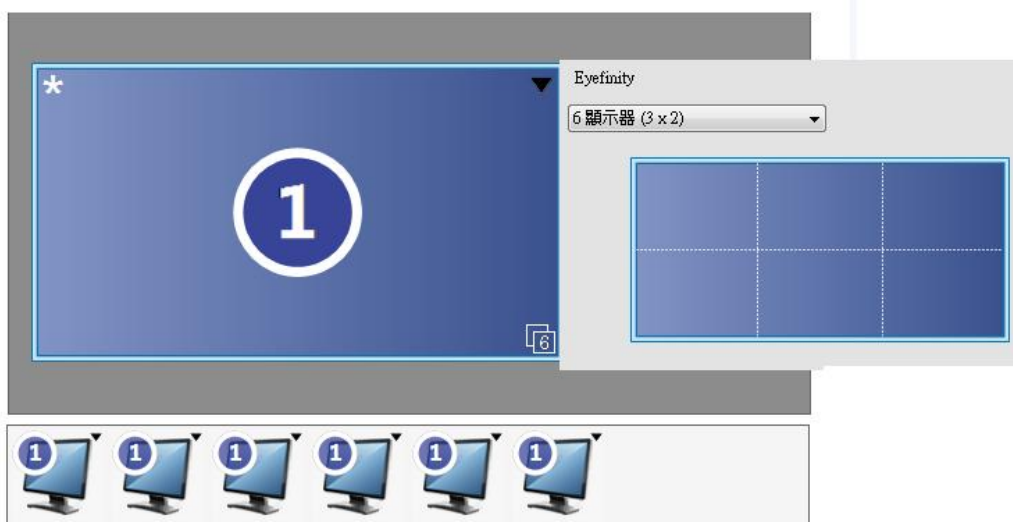
1. Select Create Eyefinity Display



2. Select Display Configuration (4 DVIs) for Primary VHDCI connection display 1~4 monitors before installing Secondary VHDCI connection display for 4~6 monitors with 2x3 Eyefinity resolution. Eyefinity mode limits to maximum resolution of 6 monitors display connected.



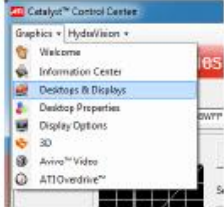




3. Arrange the order of your Displays and then the setting is completed. Use 4 DVI monitors with 1920 x 1080 monitors is recommend for Eyefinity mode (1x4, 4x1 and 2x2 mode configuration) or 6 DVI monitors with same resolution for Eyefinity 3x2 Display resolution.



Eyefinity 3x2 Display Mode.






Catalyst Control Center





Using ATI Catalyst™ Control Center to Configure Desktops & Displays


The following general instructions apply using CCC to configure displays.		
1	<p>The ATI Catalyst Control Center (CCC) Desktops & Displays manager is used to configure ATI Eyefinity settings.</p> 	 <p>CCC with one display enabled.</p>
2	<p>Right clicking on the desktop image (upper area) or clicking on the triangle in the Desktop allows you to configure desktop properties including the display mode, rotation and desktop color.</p>	
2	<p>Right clicking on the display icon (lower area) of a disabled display allows you to</p> <ul style="list-style-type: none"> • Enable a display in duplicate mode. • Extend the desktop onto the display. • Replace an active display with this display. 	
4	<p>Right clicking on the display icon (lower area) of an enabled display allows you to</p> <ul style="list-style-type: none"> • Disable a display • Identify a display • Access display properties like display specific color and scaling 	

Example of ATI Eyefinity Display Group Setting


Using ATI Eyefinity Technology Creating a 3x1 Display Group – Landscape Mode

<p>1</p> <p>First steps</p> <p>With three or more displays connected right click on the desktop or click on the black triangle  to access the context menu. Select the “Create Group” menu option.</p> <p>If you have other desktops enabled you will see a pop-up dialog offering to disable those other desktops in order to allow additional group layouts. Select “Yes”.</p>	
<p>2</p> <p>Selecting the ATI Eyefinity Group Layout</p> <p>The “Select Layout” dialog is shown allowing you to choose the desired arrangement. Only arrangements possible based on the currently detected displays are shown. Choose the 3x1 layout from the drop-down.</p> <p>The selected layout is previewed in the dialog below the drop down. Click on “Accept”.</p>	
<p>3a</p> <p>Automatically Adding Displays to the Group</p> <p>If the number of available displays matches the number required to create the selected layout (three in this case), then CCC automatically selects all of the displays and enables the group. Skip to step 4.</p>	
<p>3b</p> <p>Adding Displays to an ATI Eyefinity Group</p> <p>Select the displays that you wish to use for this group by clicking on the icons in the display area (lower part of the UI). Displays can be added or removed as needed by clicking on them. After each display is added it is enabled in duplicate (clone) mode. Once you have enabled enough displays click on the “Next” button.</p>	


4	<p>Arranging Displays</p> <p>To arrange the displays in your group there is no need to physically move or re-cable your displays. A wizard is provided to arrange the display surfaces included in your Display Group.</p> <p>Once the group is created, CCC automatically starts the wizard. If the arrangement is already correct, click "Yes" and skip to step 7, otherwise click "No" to start the arrangement wizard.</p>	
5	<p>The wizard will black out all of the displays in the group. The CCC UI will show a grid that represents the Display Group layout you have created. CCC then highlights each display in turn by switching it from black to blue. Click on the corresponding cell in the CCC UI to the one that is highlighted.</p>	
6	<p>Progress through each display one at a time until the Display Group is shown with your desktop properly organized on the group. Click "Done".</p>	
7	<p>Changing Display Mode</p> <p>To change the resolution of the Display Group click on the triangle for the surface options, then select Properties to bring up the CCC Desktop Properties and Mode settings.</p>	

<p>8</p> <p>The Display Group you've just configured will add new very large resolutions, with the maximum resolution being the highest possible combined resolution of all your attached monitors based on what they report to the graphics adapter. The other two resolutions are medium and small Display Group surfaces also based on the resolutions supported by the attached monitors.</p>	
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Using ATI Eyefinity Technology Creating a 3x1 Display Group – Portrait Mode

<p>1</p> <p>An ATI Eyefinity Display Group always has all of its displays in the same orientation. To create a group using 3 portrait mode displays (displays rotated 90°), start by first rotating the initial display by 90°. Choose the Rotate option from the desktop context menu to put the desktop in portrait mode.</p> <p>Follow the steps above for creating a 3x1 Display Group.</p>	
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Remembering a Display Group / Configuration

<p>1</p> <p>If you are working with different Display Group combinations or need to quickly move between an enabled Display Group and some other display configuration, the best approach is to create a CCC Profile to save your configuration.</p> <p>Click on the Options menu next to the logo at the top of the CCC UI and select the Profile Manager.</p>	
<p>2</p> <p>Enter a name and description for this configuration.</p>	
<p>3</p> <p>Select "all Catalyst Control Center settings" in the "Composition" tab.</p>	
<p>4</p> <p>If desired, create a Hotkey in the "Activation" tab.</p>	
<p>5</p> <p>Click on save to create the profile and Close to close the Profile manager dialog.</p>	
<p>6</p> <p>When desired, switch to this configuration using the hot key or through the options menu in the CCC UI.</p>	

Creating Different Display Groups

Most users are expected to physically configure a display group only once and then enable it when needed. For restoring an earlier display configuration the steps described in the previous section “Remembering a Display Group / Configuration” are very useful.

In order to create a new group with fewer displays than the current grouping you must first disable the group as described below and then disable at least one of the duplicated displays by right clicking on its icon and selecting the disable option from the menu.

Other Display Group Actions

With an ATI Eyefinity Display Group created, the desktop context menu includes a “Group” sub-menu that includes a number of actions:

1. Arrange

Allows you to re-run the arrangement wizard in case the displays have been moved or the cables have been reconnected in a different order.

2. Disable


Allows you to disable the group. All displays in the group will convert to duplicate (clone) mode.

3. Create

Allows you to create a new group with a different layout starting from the displays in the current group. Only layouts that include all of the current displays with the optional addition of other available displays can be created in this way.




Windows 7 Controls

In Windows 7, the Windows Key + 'P' shortcut invokes a dialog to switch between various modes.



The Windows 7 UI only supports configuring 2 displays in duplicate mode. Windows 7 will show a Display Group as two displays in duplicate mode. To configure ATI Eyefinity, the CCC Desktops & Displays page must be used.

Using ATI Eyefinity Technology Example Extended and Duplicated Configurations

<p>Example: Six monitors enabled in Duplicate mode.</p> <p><i>Note: The double square icon in the lower right corner of the desktop includes a number when 3 or more displays are combined in Duplicate mode.</i></p>	
<p>Example: Two monitors enabled in Extended mode</p>	
<p>Example: Six monitors enabled in Extended mode</p>	

First Steps

1. With three or more displays connected click on the desktop or click on the black triangle to access the context menu. Select the "Create Group" menu option.

If you have other desktops enabled you will see a pop-up dialog offering to disable those other desktops in order to allow additional group layouts. Select "Yes".



Setting the ATI Eyefinity Group Level

2. The "Select Layout" dialog is shown allowing you to choose the desired arrangement. Only arrangements which are possible based on the currently detected displays are shown. Choose the 6 x1 layout from the drop down boxes.

>The selected layout is previewed in the dialog box below the drop down list. Click on "Accept".



Automatically Adding Displays to the Group

3a. If the number of enabled displays matches the number of required to create the selected layout (Six in this case), then CCC automatically selects all of the displays and enables the group. Skip to step 4

Adding Displays to an ATI Eyefinity Group

3b. Select the displays that you wish to use for this group by click in the icons in the display area (lower part of the UI). Displays can be added or removed as needed by clicking on them. After each display s added it is enable din duplicate (clone) mode. Once you have enabled enough displays click on the "Next" button.

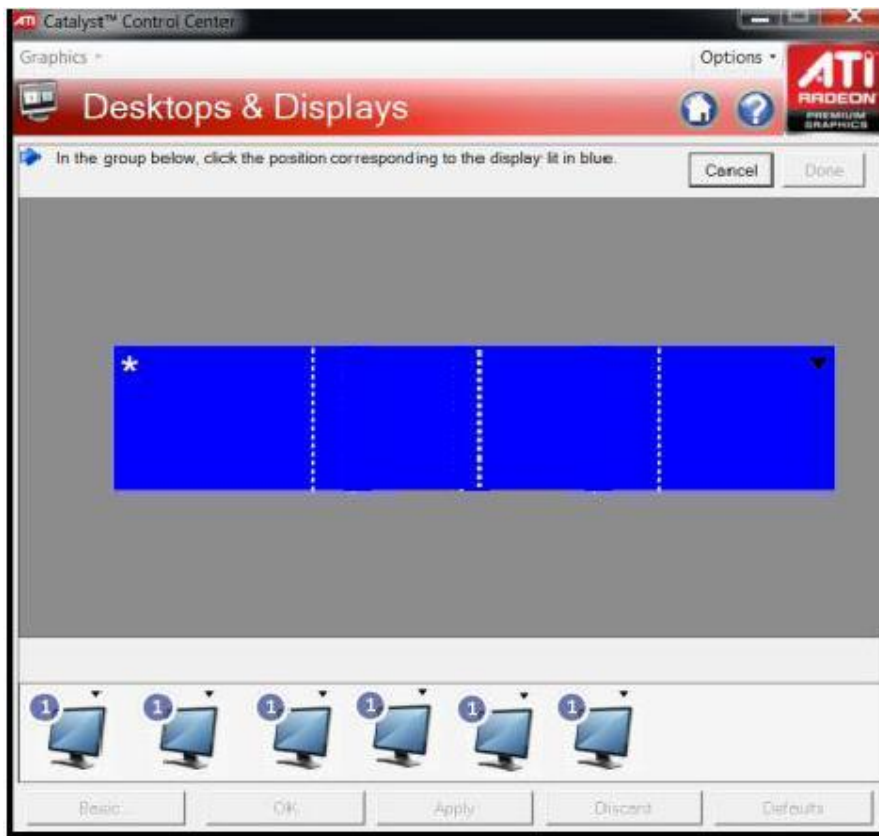


Arranging Displays

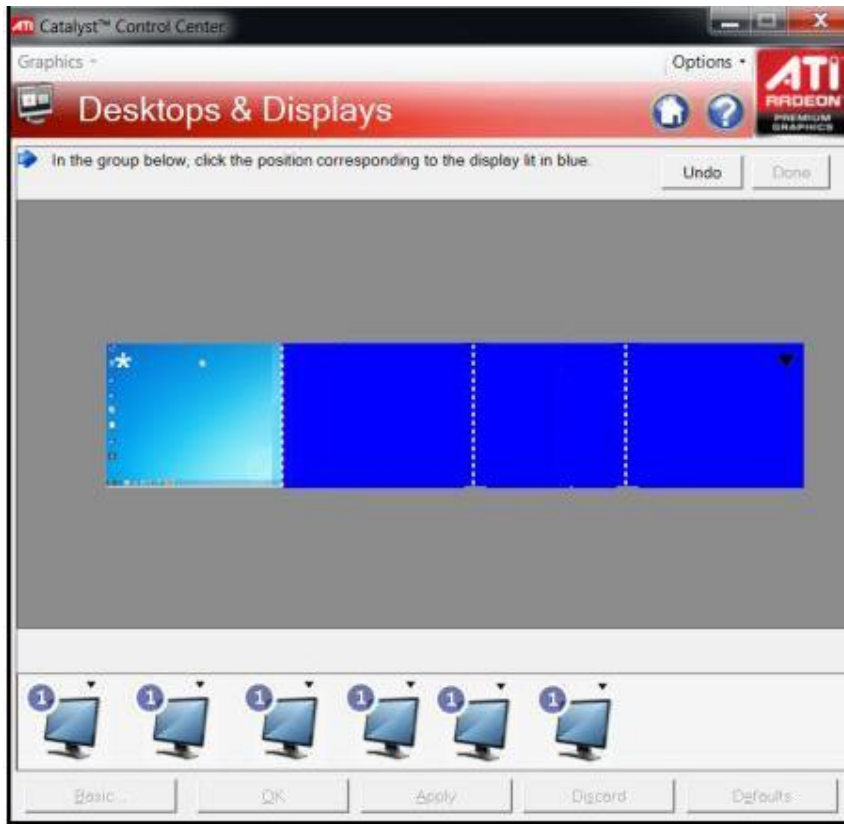
4. To arrange the displays in your group there is no need to physically move or re-cable your displays. A wizard is provided to arrange the display surfaces included in your display group. Once the group is created, CCC automatically starts the wizard. If the arrangement is already correct, click "Yes" and skip to step 7, otherwise click "No" to start the arrangement wizard



5. The wizard will black out all of the displays in the group. The CCC UI will show a grid that represents the Display Group layout you have created. CCC then highlights each display in turn by switching it from black to blue. Click on the corresponding cell in the CCC UI to the one that is highlighted.

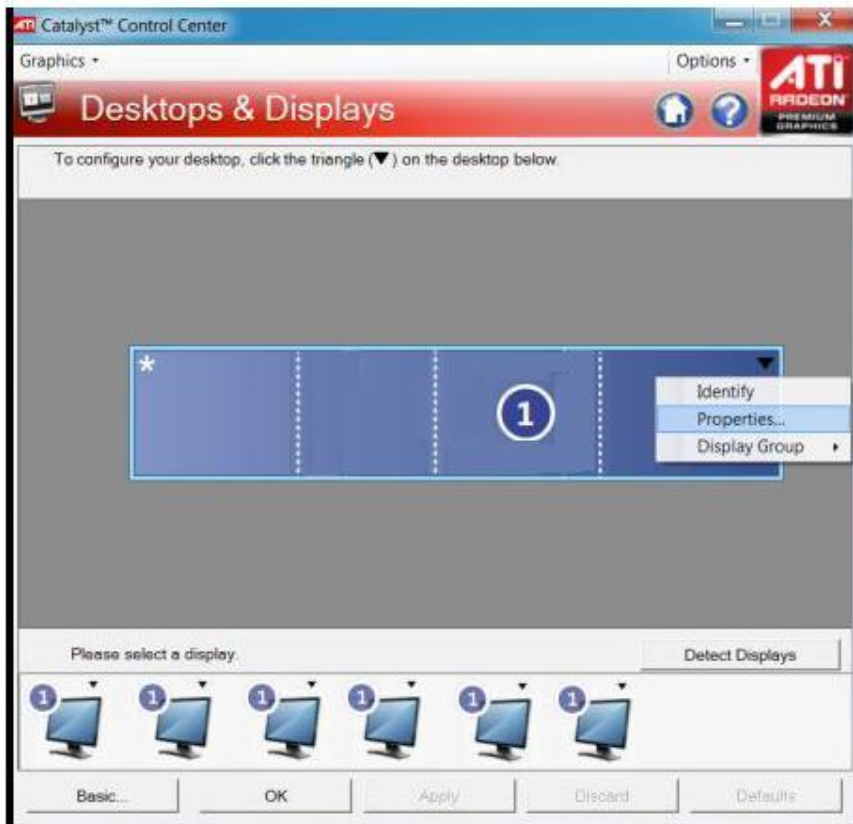


6. Progress through each display one at a time until the Display Group is shown with your desktop properly organized on the group. Click "Done".

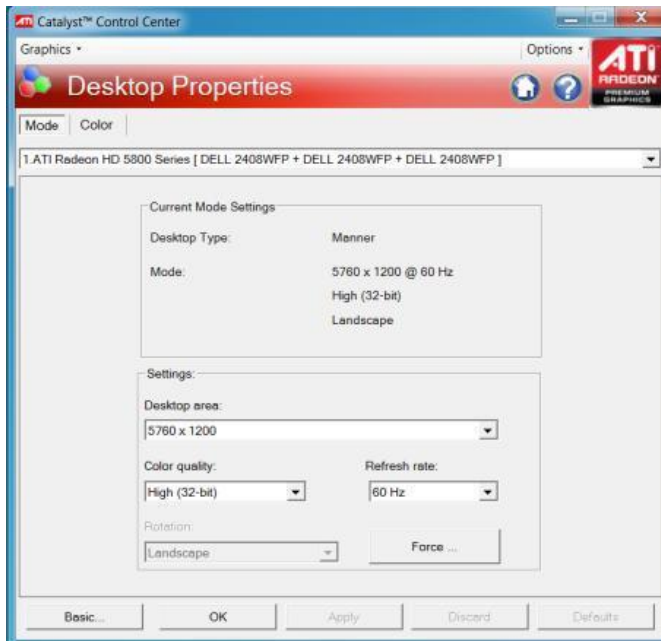


Changing Display Mode

7. To change the resolution of the Display Group click on the triangle for the surface options, then select Properties to bring up the CCC Desktop Properties and Mode settings.

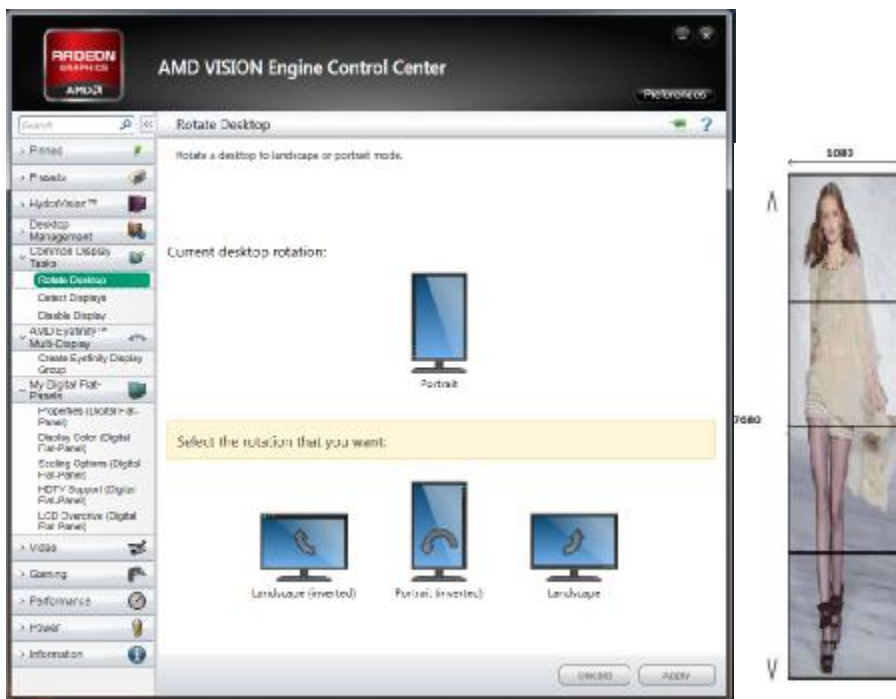


8. The Display Group you've just configured will add new very large resolutions, with the maximum resolution being the highest possible combined resolution of all your attached monitors based on what they report to the graphics adapter. The other two resolutions are medium and small Display Group surfaces also based on the resolutions supported by the attached monitors.



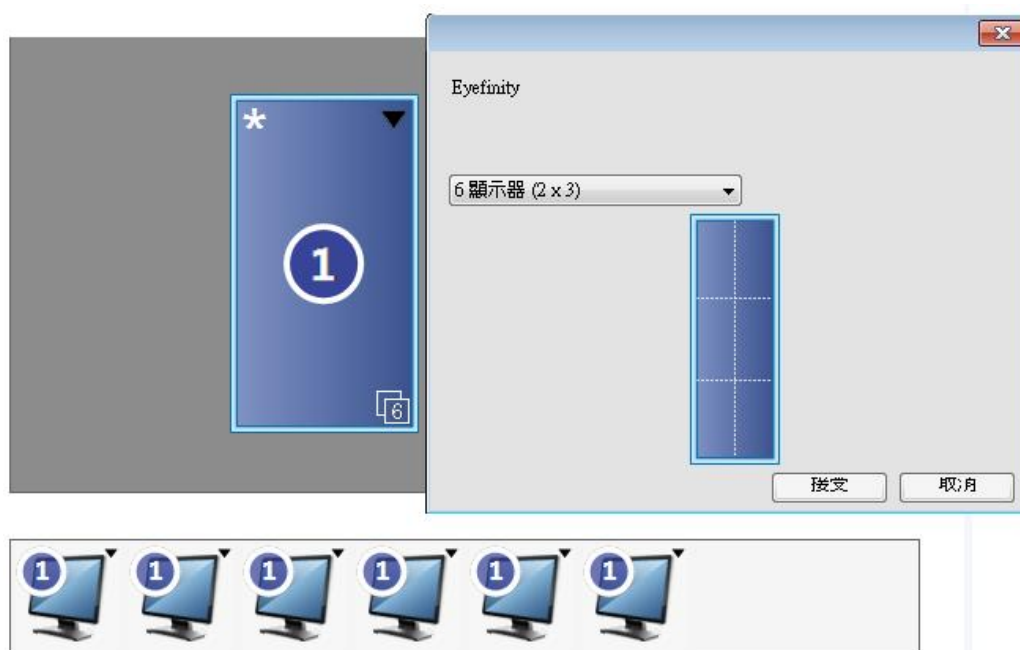
Example : Eyefinity 1 x 4 Portrait Configuration

Before Eyefinity setting for 1 x 4 Portrait configuration, Rotate the desktop to Portrait position. Setting Eyefinity configuration as according.

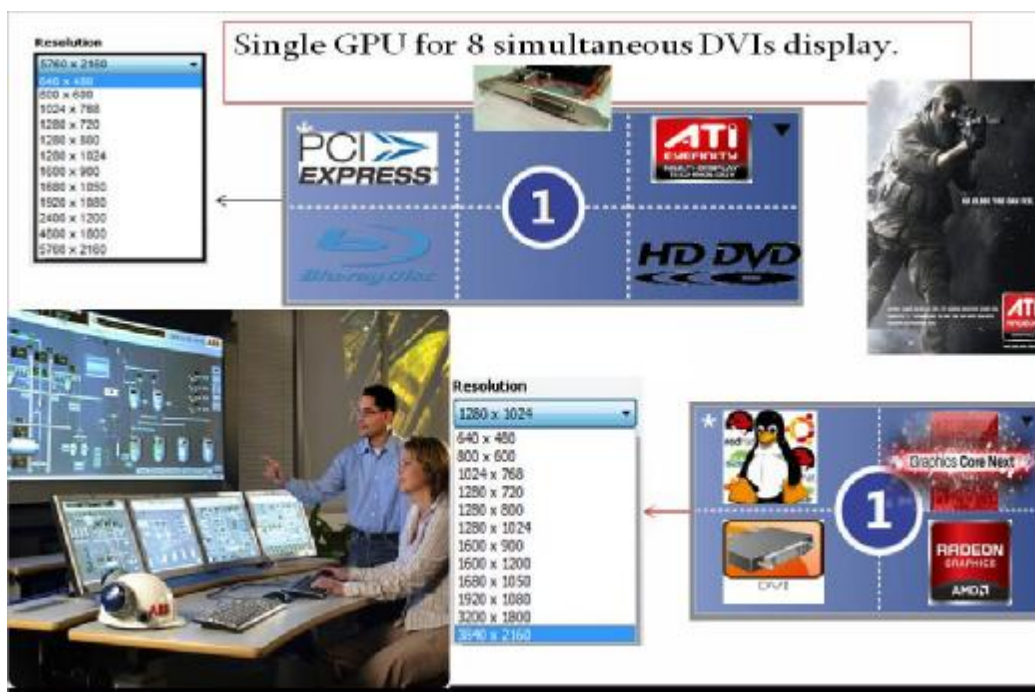


Example of Portrait Mode setting Reference.

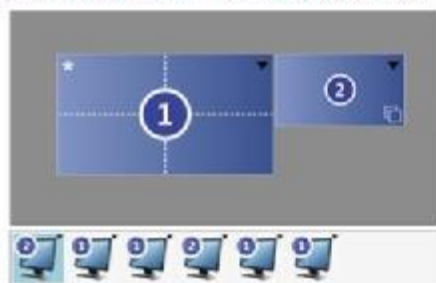
Example : Eyefinity 2x3 Portrait Configuration



Example Display Configuration of the Radeon 7750 Mode.



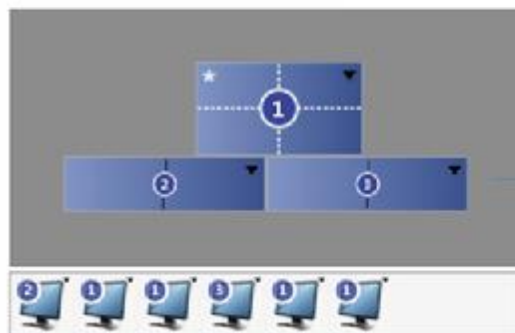
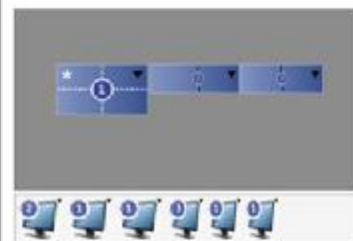
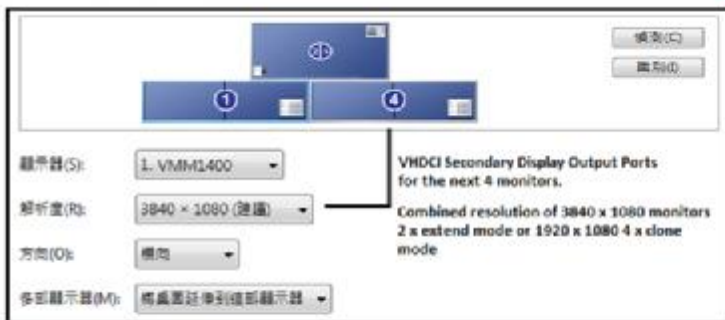
1 x Eyefinity 3840 x 2160 + 2 x clones 3840 x 1080 – Total 8 DVIs format



Installation : Need to disabled 2 x display screen
And configure as 4 x extend mode first before
setting Eyefinity 2 x 2 mode or 4 x 1 mode resolution.

All initial installation must be configure from the primary
VHDCI ports for the first 4 monitors in the CAT. display properties
before connecting the secondary VHDCI ports to the
next 4 monitors for setting. Incorrect procedure in the installation
may leads to the display image in wrong order of display.

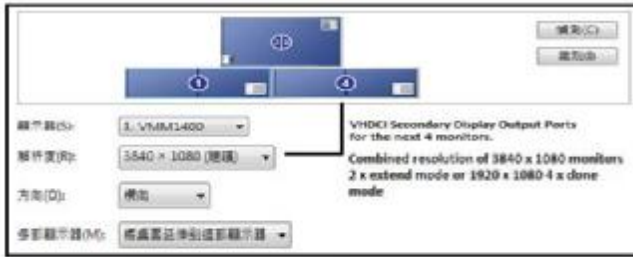
Example of display format setting



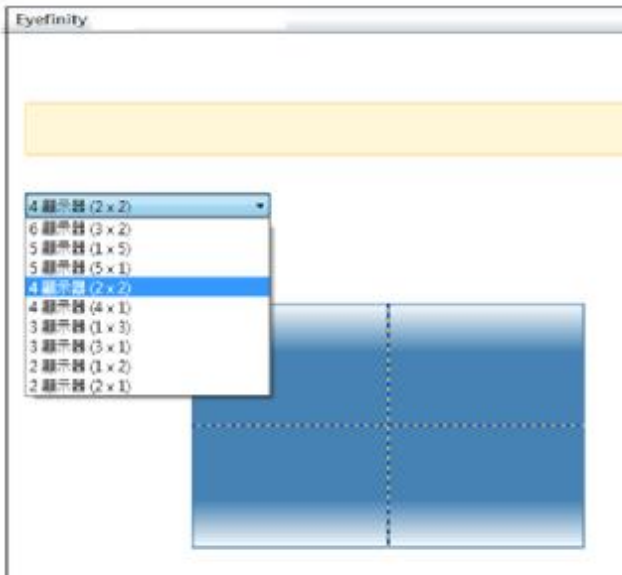
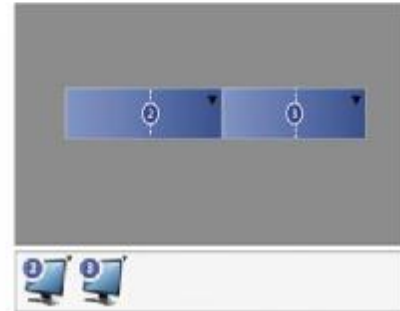
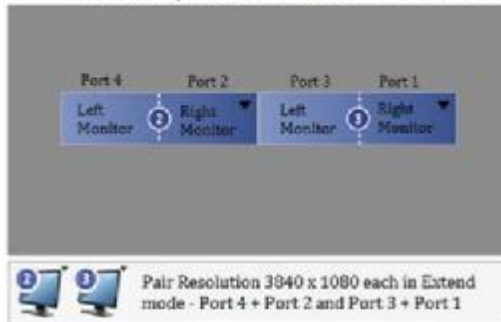
Installation of the Secondary VHDCI monitors configuration

Secondary monitors are auto-configured for 3820 x 1080
extend mode with 2 monitors as a pair resolution.
Note that it also can be configure into 4 x 1920 x 1080
resolution clone mode. Secondary VHDCI DVIs ports are
Not recommended for initial setup for the bootup screen
display as it exhibit 3840 x 1080 pair screen monitors display.

Display Setting format on VHDCI Secondary Ports.



Secondary VHDCI Monitors Connection



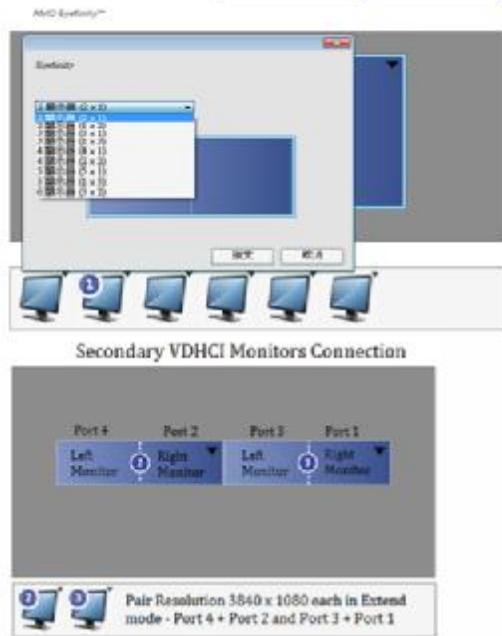
Eyefinity Mode 2 x 2 configuration

Maximum 4 or 6 x DVI or HDMI's Display resolution when in Eyefinity support.

Before setting for Eyefinity mode, it is recommended to set the monitors as extend mode or monitors as disabled if later to be configure it as extend mode display support after Eyefinity setting.



Secondary VHDCI display formation and connection



Note that the maximum Eyefinity mode configuration supports only up to 8 monitors resolution. The secondary VHDCI display monitors will exhibit 2 x clone 1920 x 1080 resolution from the 3840 x 1080 pair monitors after setting the monitors resolution with Eyefinity 3 x 2 mode for 6 display monitors. Disconnect the Secondary VHDCI Port 1 and Port 2 from the monitor to utilize Eyefinity mode 2 x 3 resolution of 5760 x 2160 in correct manners.



Note : For Eyefinity 6 mode, it is recommend to connect the Secondary VHDCI port 3 and Port 4 or Port 1 and Port 2 to the monitors only.

8 x clone mode DVI Displays Reference

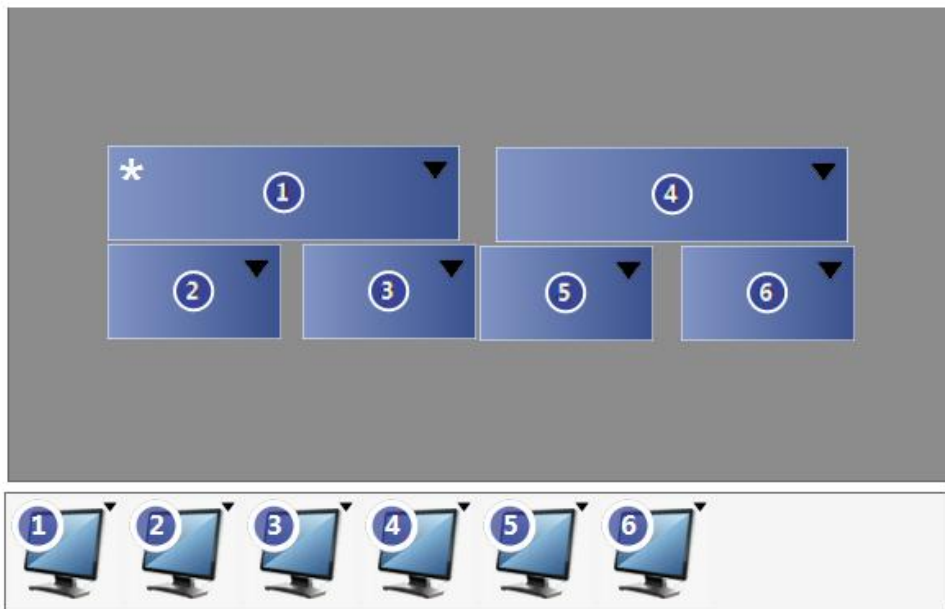


Display setting for 8 DVI's clone mode format :

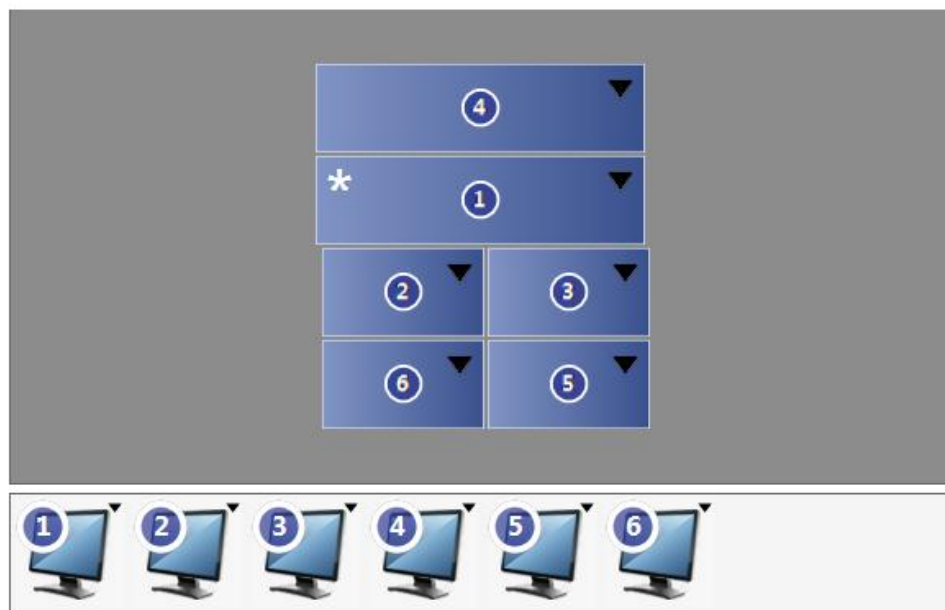
8 DVI's display configure as clone mode when secondary VHDCI output is configured as 1920 x 1080 resolution. Note that the secondary VHDCI ports display of pair 3840 x 1080 resolution when set at 1920 x 1080 resolution will auto-configures as 4 x clone resolution of 1920 x 1080. For correct installation of the order of the monitors, the primary VHDCI ports need to be configured first before connection of the secondary VHDCI ports to the monitors.



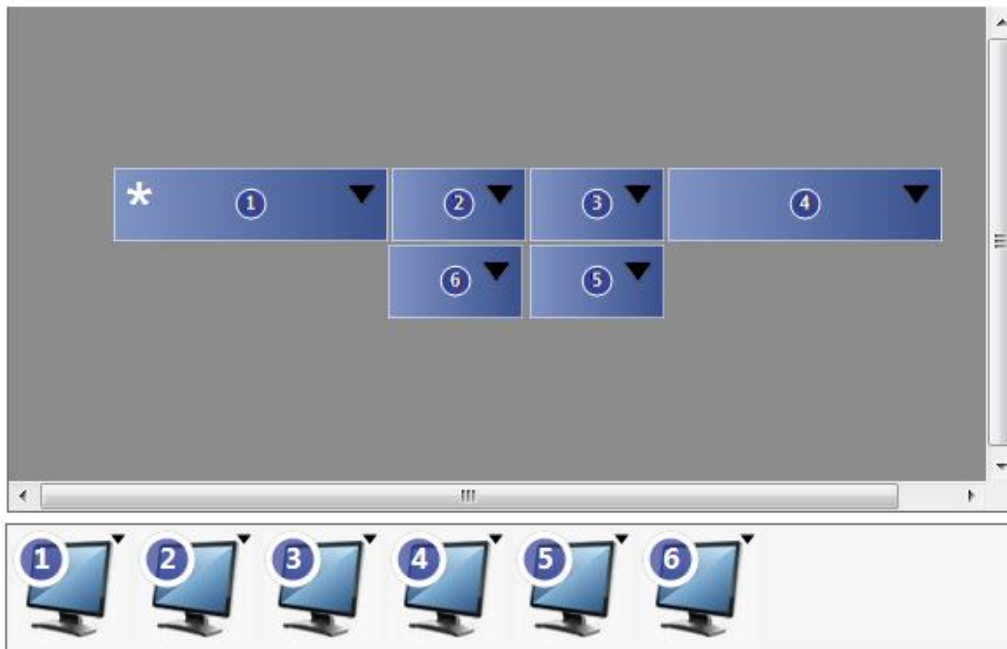
8 DVI Displays - Extend mode DVI Display Reference



Formation of Extend Mode (A)

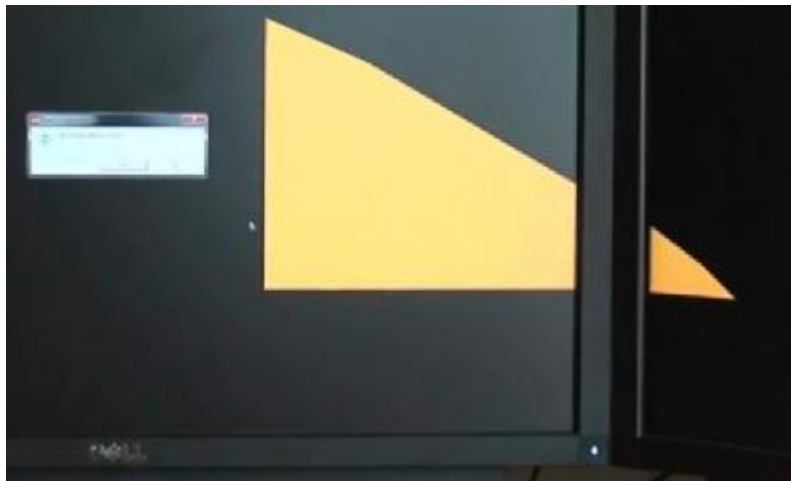


Formation of Extend Mode (B)



Formation of Extend Mode (C)

Bezel Compensation



Bezel Compensation Support :

Driver level bezel correction allows you compensate for the dead space between your LCDs and converts this area into a blind spot, rather than a hard stop. Prior to introduction of bezel correction, textures would end on one monitor and abruptly start on the second, creating a very disjointed image. The bezel correction works by creating a custom resolution for your configuration and broadcasting this as the native setting for all your apps.

Bezel correction is an optional step when setting up a new Eyefinity group in the Catalyst control center, so make sure you don't miss it. You might not notice it in a racing game when looking at the grass or sky, but it will stick out like a sore thumb when you're looking at a face that has been incorrectly split in two by a 4-inch bezel.

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4. Troubleshooting Tips

The following troubleshooting tips may help if you experience problems. Contact your dealer

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

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

- Make sure you selected the appropriate display device and graphics card when you install the graphics driver.
- For more troubleshooting information, please right-click the ATI icon in the notification area.
- Restart your computer. Press <F8> on your keyboard after system starts up. When the Windows Advanced Options Menu appears, select Safe Mode and press <Enter>. After getting into Safe Mode, in Device Manager check whether the driver for the graphics card is correct.
- For more assistance, use the Troubleshooting Guide located in the Windows Help or contact your computer manufacturer.
- If you are not able to find the desired monitor color/resolution settings:
The color and screen resolution options available for selection depend on the graphics card being installed. If necessary, adjust your monitor's setting using monitor's adjust panel to make the screen look focused, crisp, and sharp. (Please refer to the monitor's manual.)
- If there is issue with the setting of the Eyefinity mode, set all display monitors to Extend mode to recover the monitor configuration to reset to default mode.

More multi display information, please visit :<http://www.pcidv.com>