



User Guide

***to graphics software
for CHROME 400 Series
and CHROME 500 Series***

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- Increase the separation between the device and receiver
- Connect the device into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/television technician for help

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SECTION 1 INTRODUCTION

This S3 Graphics User Guide provides instruction for the installation and removal of display drivers and associated utilities for the Windows Vista and Windows XP operating systems using S3 Graphics CHROME 500 Series GPUs.

1.1 How to Use this Guide

This section summarizes the basic conventions used in S3 Graphics User Guide instructions.

Subject to Change: S3 Graphics continues software enhancements throughout the life of a product. The images provided as illustrations of utility and user selection options are always subject to change and may not be identical either in appearance or in options to the software your vendor has provided. This guide is compatible with S3 Graphics software as of the document date.

Installation instructions assume you have a vendor-supplied CD which contains S3 Graphics software customized for your S3 Graphics hardware. The instructions in this document assume that the source drive for the software is a hard drive or CD-ROM drive mapped by the system as drive D:. If installation is from another source, replace D: with the appropriate source drive location.

Instructions also assume that your operating environment is either:

- Windows Vista SP1 or
- Windows XP with SP3 and includes the latest release of DirectX.

These environments provide an optimized user experience with your S3 Graphics' hardware.

Most examples show the appearance and behavior representative of the Windows Vista operating system. Windows XP will behave similarly, but not necessarily identically, unless noted otherwise.



1.2 Technology Summary

The PCI Express™ **CHROME 500 Series** products are S3 Graphics' high performance 3D graphics and video processors that combine hardware acceleration for Microsoft's DirectX™ 10.1 Shaders with the Hi-Def™ high definition display capabilities and the advanced ChromotionHD 2.0 Programmable Video Engine. The **CHROME 500 Series** brings stunning image quality, incredible 3D graphics performance, as well as tremendous flexibility including a wide range of feature rich products for desktop and mobile applications, offering a perfect balance of performance, power, and value. The unified driver support and commercial grade drivers remain true to S3 Graphics' reputation for reliable, high quality graphics solutions.

CHROME 500 Series Features

- ➔ PCIe 2.0 x16/x8/x4/x1 support
- ➔ Shader Model 4.1, Microsoft DirectX 10.1 Unified Shader Architecture
- ➔ Supports Direct3D and OpenGL applications
- ➔ Hi-Def integrated encoder supporting all 18 ATSC DTV formats
- ➔ ChromotionHD 2.0 Programmable Video Engine
- ➔ Enhanced H.264, MPEG-2 HD, VC-1 and WMV9-HD HW acceleration
- ➔ ArtisticEffects™ Video Filters
- ➔ ChromoVision™ full screen video for secondary digital display
- ➔ HDMI/DP/DVI/LCD/CRT integrated display support
- ➔ High performance 400MHz 10-bit DAC
- ➔ Display resolutions up to 2048x1536, 32bpp on CRT
- ➔ Display resolutions up to 2560x1600 with Dual-link DVI
- ➔ Dual DVI or HDMI support for independent DuoView™
- ➔ DuoRotate™ two display Independent rotation

1.3 System Requirements

S3 Graphics requires the following minimum system and software:

- ➔ **Computer** Intel Core2 Duo, Core2 Quad, Pentium 4 or Celeron, AMD Athlon Dual-Core, Single-Core, 64 FX VIA Nano, VIA C7 or later compatible processor
- ➔ **Expansion Slot** PCIe
- ➔ **Operating System** This user guide is compatible with Windows Vista SP1 or Windows XP with SP3
- ➔ **Display Output** DVI, HDMI or CRT capable of displaying at least VGA 800 x 600



1.4 Identification

This guide is compatible with current S3 Graphics CHROME 400 Series and CHROME 500 Series graphics adapters. The graphics chipset Vendor ID is **5333** for S3 Graphics.

S3 Graphics CHROME 500 Series products include the following. The Device ID for desktop products is **9060**.

CHROME 500 Series	CHROME 400 Series
CHROME 530 GT	CHROME 440 GTX
(others in future)	CHROME 430 GT
	CHROME 430 GS

1.5 Modes

Available display resolutions for CHROME 400/500 Series products will depend on the types of devices (DVI, HDMI, and CRT). The device configuration and the signals the GPU receives from the display device also influence available resolutions.

1.5.1 Windows Modes

These Windows desktop modes are supported for most CRT and DVI display devices in both single and dual display configurations, up to the capabilities of the detected devices:

↘ 800 x 600	at 8, 16, 32 bpp	Refresh Max 100
↘ 1024 x 768	at 8, 16, 32 bpp	Refresh Max 100
↘ 1280 x 960	at 8, 15, 32 bpp	Refresh Max 85
↘ 1280 x 1024	at 8, 16, 32 bpp	Refresh Max 100
↘ 1600 x 1200	at 8, 16, 32 bpp	Refresh Max 100

1.5.2 HDMI Compatible Modes

The following default display resolutions are provided for HDMI, assuming the resolutions are reported as supported by the connected HDMI. Additional modes may be available, including wide screen modes, if the detected device reports wide-screen support.

- ↘ 640 x 480p
- ↘ 720 x 480p
- ↘ 720 x 576p
- ↘ 1280 x 720p
- ↘ 1920 x 1080p



1.5.3 Device Specific Modes

The following additional modes may be accessible if reported as supported by a connected display device. Supported modes are not limited to the list below, and may include wide screen modes, if the detected device reports wide-screen support.

➤	848 x 480	at 8, 16, 32 bpp	Refresh Max 60
➤	1152 x 864	at 8, 16, 32 bpp	Refresh Max 75
➤	1280 x 768	at 8, 16, 32 bpp	Refresh Max 85
➤	1360 x 768	at 8, 16, 32 bpp	Refresh Max 60
➤	1400 x 1050	at 8, 16, 32 bpp	Refresh Max 85
➤	1680 x 1050	at 8, 16, 32 bpp	Refresh Max 85
➤	1920 x 1200	at 8, 16, 32 bpp	Refresh Max 85
➤	1920 x 1440	at 8, 16, 32 bpp	Refresh Max 85
➤	2048 x 1536	at 8, 16, 32 bpp	Refresh Max 75
➤	2560 x 1600	at 8, 16, 32 bpp	Refresh Max 60

SECTION 2 INSTALL HARDWARE

Review documentation provided by your system vendor. Some systems, for example Dual-PCIe slotted systems, may require special configuration.

If your S3 Graphics GPU is integrated into your system's motherboard, skip to section 2.4 to begin attaching video cables to the system.

2.1 Before you Install your Board



DO NOT INSTALL THE SOFTWARE UNTIL YOU INSTALLED THE HARDWARE IN YOUR SYSTEM

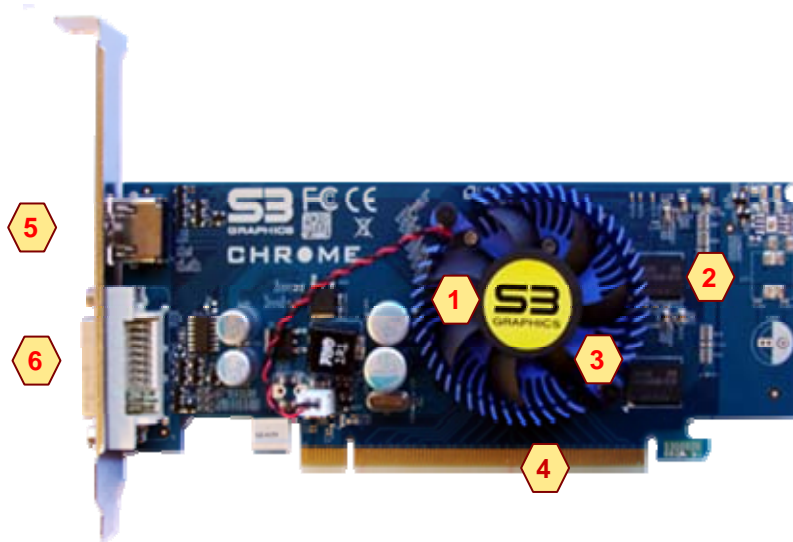
Windows Vista and Windows XP are capable of using Plug and Play detection to assist in the installation of new hardware. Your new S3 Graphics board must be installed before software installation is attempted so that the operating system can detect the presence of the new hardware.



Warning: To avoid accidental electric shock, shut your computer down and unplug the power cord. To avoid damage from static electrical discharge and to ground yourself, touch the metal chassis on your computer before starting any procedures below.

2.2 Your Board Components

The following diagram shows a typical CHROME 500 Series PCIe board layout with its major components and connections.

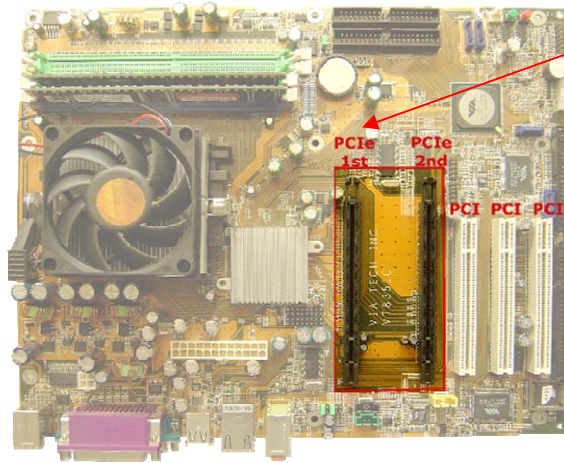


- | | | | |
|---|---|---|------------------------|
| 1 | CHROME 500 Series GPU (under fan-sink) | 5 | HDMI Receptacle |
| 2 | Video RAM (under fan-sink) | 6 | DVI Receptacle |
| 3 | Fan-sink | | |
| 4 | PCIe Interface | | |

Note: Your board may appear different than the above example. For instance, your board may be blue in color instead of green. Or your board may have a different fan-sink. Or your board may have a second HDMI or DVI receptacles, or may have a CRT receptacle.

2.3 Install Your New Board

1. Turn the power off and unplug your system.
2. Remove your computer cover and locate the slot where you will insert your new graphics card in a PCIe (PCI Express) slot (usually dark brown color). For a dual PCIe slot system, a single graphics board is usually installed in the slot closest to the CPU.

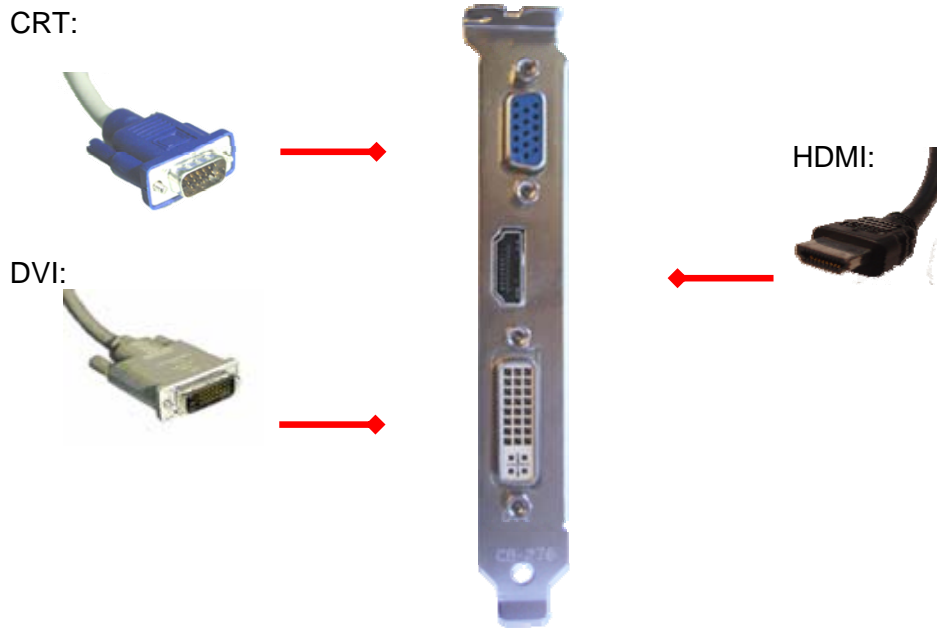


3. Remove any existing VGA card in the slot you want to use. If the slot was empty, remove the bracket plate associated with the slot. You may need to remove the screw which attaches the card or bracket to the case.
4. Ground yourself by touching the metal chassis on your computer before handling your board.
5. Align your S3 Graphics board directly above the slot. Your board is designed to fit only one way.
6. Insert your board firmly into the slot. Take care to press it evenly and snugly into its slot. Do not force.
7. With the board securely in its slot, attach it to the computer frame with the mechanism or screw you removed in Step 3.
8. Secure your computer cover.

2.4 Attach Video Cables

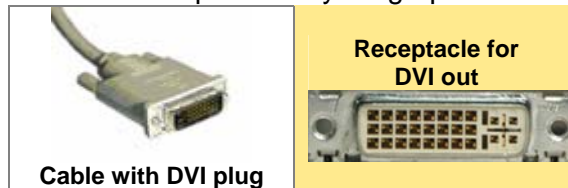
Video output connections must be correctly attached to your system to enable the video display capabilities of your new S3 Graphics board.

The connections available on the bracket of your graphics board may look similar to the following example.

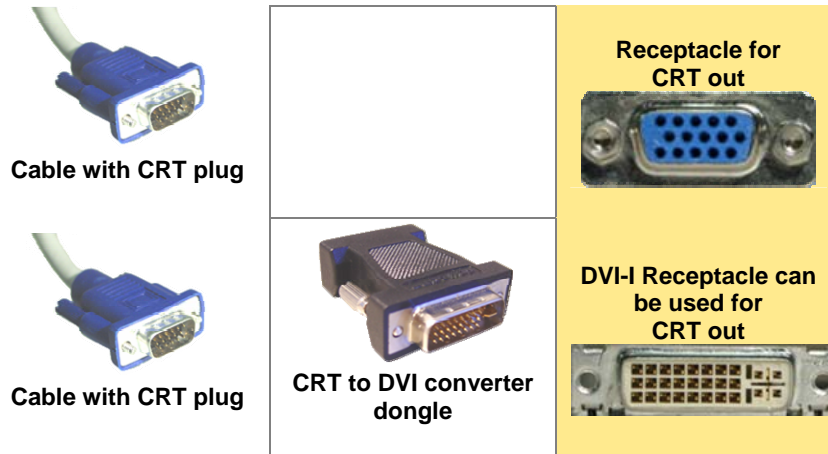


Connect at least one display output device.

9. To output display to a DVI panel device, connect the DVI plug at the end of your monitor cable to the **DVI-I** connector receptacle on your graphics board.



10. To output display to a CRT device, connect your CRT monitor cable to the CRT receptacle if your board has one. Otherwise, use a CRT-DVI converter dongle. Connect the dongle to the DVI-I connector receptacle on your graphics board.



11. To output display to your HDMI Device, connect your HDMI cable to the HDMI connector receptacle located on your board.



Special Notes for HDMI:

- If a HDMI-DVI dongle is used to attach a DVI Display monitor to the HDMI receptacle on the graphics board, the resulting output will be DVI and S3 HD Audio will not be available.
- If a DVI-HDMI dongle is used to attach a HDMI Display monitor to the DVI receptacle on the graphics board, the resulting output will be HDMI and S3 HD Audio will be available for configuration under Windows Vista or Windows XP.

- ➔ Microsoft Windows Vista provides an HD Audio software driver, which must be installed and activated for S3 HD Audio to be available.
- ➔ To use S3 HD Audio with Windows XP, you must have Windows XP Service Pack 3 installed. Additionally, you need to set S3 HD Audio as the default audio device in the Sound page of the Control Panel.

2.5 Finish Connections and Power On

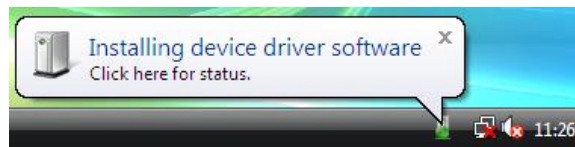
12. Re-connect any other detached cables.
13. Plug your system into its electrical source. Confirm the display output devices (DVI, CRT, HDMI) you want to use are powered.
 - Tip:** Even when you have connected multiple output devices, your system will reboot on a single display. Dual display will not be available until you have are in Windows and have initialized a dual display configuration.
14. Reboot your system. Continue with software installation.

SECTION 3 INSTALL SOFTWARE

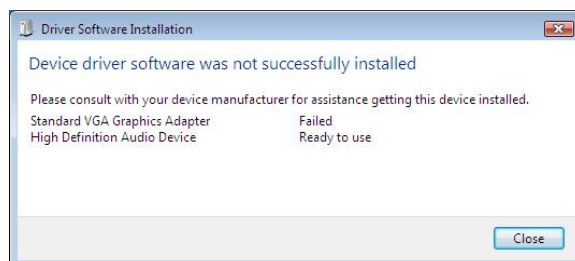
Driver packages for S3 Graphics GPUs (from CD or download) should always include a companion set of display drivers and multi-language utilities. Depending on the source of your download package, the package may be compressed, and a driver install tool may also be included.

These instructions detail an initial installation of S3 Graphics driver software.

- Step 1.** Have your CD with S3 Graphics software available. You will need it later.
- Step 2.** Install your board with a S3 Graphics GPU by following the Hardware Installation instructions in [Section 2](#).
- Step 3.** Turn on the system.
- Step 4.** **For Vista:** Because your CHROME 400/500 Series GPU is newer than Windows Vista, the operating system will not be able to recognize the GPU. As Windows Vista launches, follow any on-screen prompts as the operating system initially installs a generic low resolution Microsoft-provided device driver. (Rarely, the operating system may prompt you for an install location.)



Installation status will be reported.



As the installation finishes, a Windows Vista message box will tell you if a restart is required. **Restart** as requested.

To install your vendor- or S3 Graphics-provided software with **S3 ScreenToys** utilities, proceed from Step 5, below.



(Alternate method: see instructions in the Driver Maintenance section under [Installing Driver Updates](#).)

Step 4. **For Windows XP:** As Windows XP launches, a **Found New Hardware Wizard** message window appears.

Continuing for both Windows Vista and Windows XP:

Step 5. Insert your CD with S3 Graphics software in your CD-ROM drive. The CD should auto-run and launch the install tool.

Tip: If your CD does not auto-run an install program, Click **Start**, **Run** and **Browse** to **D:\S3G_CHROME5x_Vista_XXXXXX.exe** (where D: is your CD-ROM drive) and the exe filename includes the S3 Graphics product abbreviation, the name of the operating system and version number. (This filename is the typical format for a compressed package.) Click **Open**. Installation from the compressed package should proceed similar to the method described below, except that the files will first be expanded to a local folder.

If your package is already uncompressed, it may be located in a local subdirectory, called **S3Graphics/S3Graphics_CHROME5x...** To launch the tool, navigate into the desired folder and Click **Open** on the appropriate "setup.exe" file, for example,
C:\S3Graphics\S3Graphics_CHROME5x... \SETUP.EXE.

Tip: The wizard cannot find a driver in a compressed file. If your driver is already expanded, you can alternately, click **Next to Install the software automatically**. The Wizard will look for the appropriate drivers, copy drivers and related software to your system, and proceed automatically with the installation. The screen will report **Please wait while the wizard installs the software...**

If you cannot find any install program or do not want to locate the drivers automatically, select **Install from a list or specific location (Advanced)**, click **Next**, and browse to the directory where the uncompressed **S3 Graphics** display adapter driver files reside.

Step 6. Proceed with the installation by responding to any on screen prompts that appear.

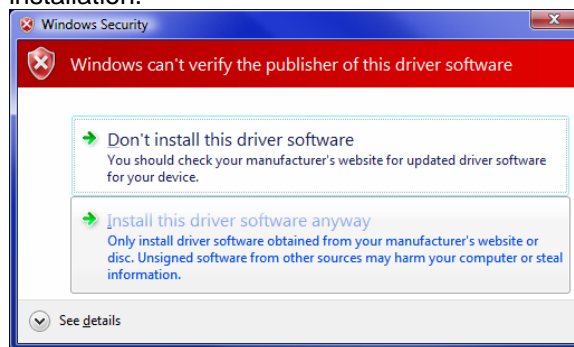
Step 7. If a window appears asking you to accept the S3 Graphics license agreement, click **I accept** and then click **Next** to continue the installation.

In the Windows Security dialog, click **Install**.



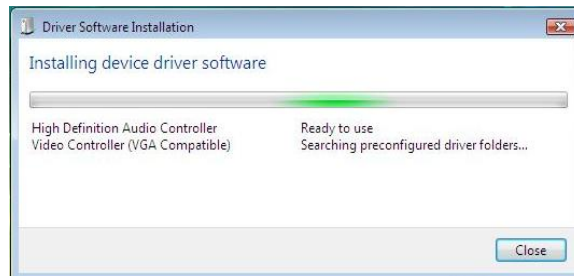


Tip: If a message window appears indicating your software “has not passed Windows Logo testing”, click **Continue Anyway** to force the installation.



Step 8. Note that the screen may go blank for a second or two during the driver installation process. This is normal.

Step 9. The install process may take a few minutes.



Step 10. If the **Completing the Found New Hardware Wizard** window appears, click **Finish**.

Tip: Depending on the current state of the system and the software installed, a reboot may be required to fully initialize the software.

Step 11. Congratulations. Your S3 Graphics software is now installed.


SECTION 4 DISPLAY SETTINGS BASICS

Windows operating systems give you the ability to customize your graphics desktop through the Display Settings pages and controls. This section outlines the basic controls provided by the operating system, some of which are also accessible from S3 ScreenToys links. Subsequent sections of this manual will detail the use of the additional controls which are available through the S3 Graphics ScreenToys utilities.

Basic display driver settings can be configured through the **Display Settings** dialog window (XP: **Display Properties** dialog window, **Settings** tab).

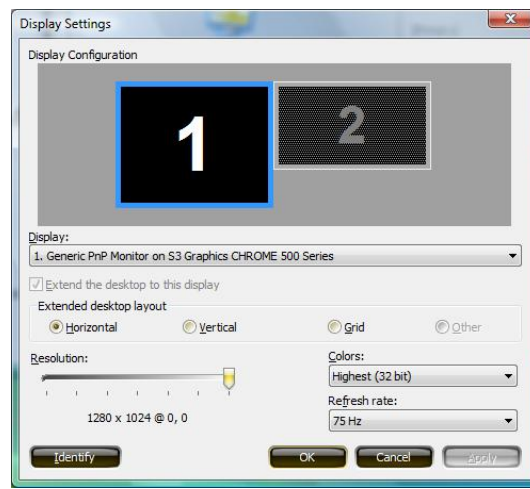
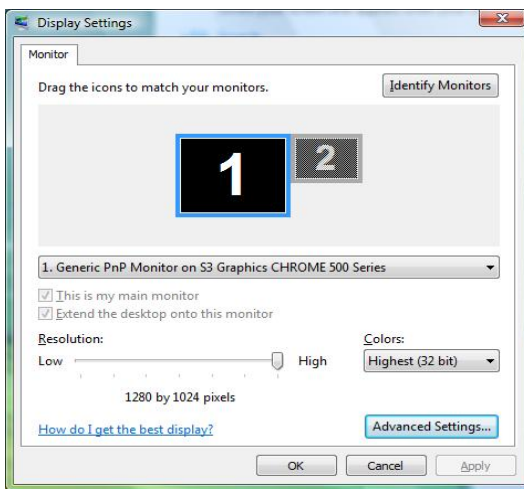
To open the **Display Settings** page:

- ➔ Right click in any unpopulated area of the **Desktop**.
 - Vista: Click **Personalize**. Click **Display Settings**.
 - XP: Click **Properties**.
- or
- ➔ Click **Start**, then **Settings**, then **Control Panel**.
 - Vista: Click **Appearance and Personalization**. In the **Personalization** area, click **Adjust screen resolution**.
 - XP: Double-click the **Display** icon in the **Control Panel** folder.

Some, but not all, of the basic display setting adjustments can also be accessed on a **Display Settings Display configuration** dialog which can be launched from the **Options** dropdown list menu on the  **ScreenToys Device management** page.

Windows Vista
Display Settings Monitor
(access from **Control Panel Personalize Display Settings**)

Windows Vista
Display Settings Display configuration (access from **S3 ScreenToys Device management Options** dropdown list menu)

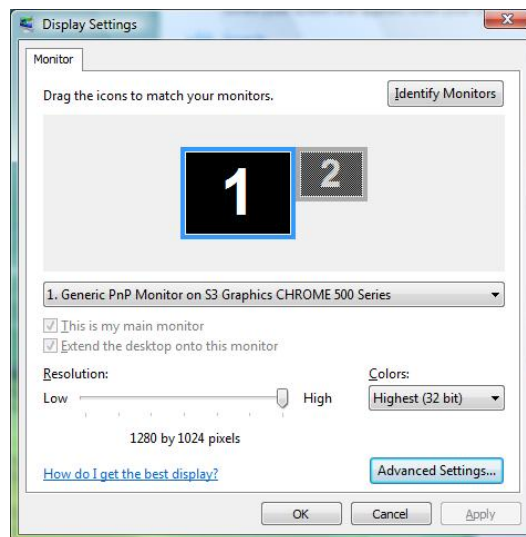


4.1 Screen Resolution and Color Quality

Control the desktop's screen resolution and color quality through the Windows Vista **Display Settings** dialog or the Windows XP **Display Properties Settings**.

ACCESS: The basic display settings window is accessible when you:

- ➔ Vista: right click on any unpopulated area of the **Desktop**. Click **Personalize**. Click **Display Settings**. The **Display Settings** window appears open on the Monitor tab.
- ➔ XP: right click on any unpopulated area of the **Desktop**. Click **Properties**. The **Display Properties** window appears. Click the **Settings** tab.



OPTIONS:

Settings for Basic Display

Use these settings to adjust basic settings for each display device. Each display output device can be configured with independent settings. If you have multiple displays, use the dropdown list to select the display for which you wish to configure basic settings.

Resolution
(XP Screen resolution) **area**

Slide the **Resolution** slider bar to the desired resolution.

Sliding the bar to the right selects a higher resolution, which will display the image using more pixels per inch of screen area. This produces a sharper image with more detail.

Tip: If you change to a high resolution and find the desktop fonts and icons are too small, they can be adjusted by clicking **Personalization**, then **Change desktop icons** or **Adjust font size (DPI)** in the left menu column (XP: **Display Properties**, then clicking **Appearance** tab) and selecting your preferences.

Colors (XP Color quality) **area**

Color quality or color depth is usually measured in bits per pixel (BPP), and indicates the size of the color palette of available colors for use in the screen image:

Windows	Description
Highest (32 bit)	True Color
Medium (16 bit)	High Color (65536 colors)

Click the down arrow to the right of the color dropdown list to view the available options for **Colors**. Click on your desired color depth.

Tip: Use of 32 bit color is preferred by most users. However, for some applications or with very high resolution configurations, selection of 16 bit color will provide better performance.



4.2 Basic Display Settings

General Display Settings

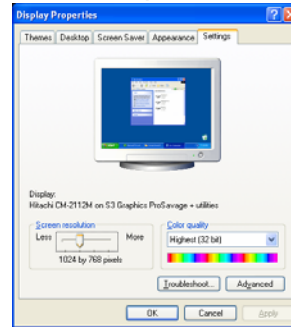
For Windows Vista these settings appear on the **Display Settings/Monitor** tab. For Windows XP these settings appear on the **Display Properties/Settings** tab.

Use these settings to identify and adjust the relationships between your monitors when you have multiple display output devices.

Display Monitor Icon area

This area contains the Monitor icons which represent the relationships between your displays.

If only one output device is supported by your configuration (as in the Windows XP example at right), only one monitor icon will appear and the display selection and dragging options described below will not be available.

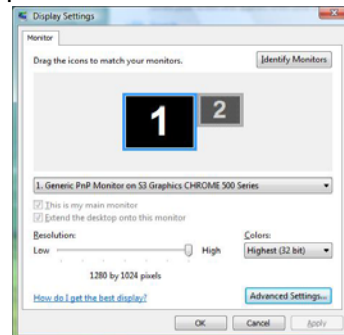


If two devices are supported, two rectangles will be visible (as in the Windows Vista example below). The rectangle with the number 1 will correspond to the display device associated with the 1 in the Display dropdown list below the monitor icon area. The 1 also identifies the Primary Monitor (monitor showing the Primary View, see Using Multiple Monitor section below for further detail).

If the configuration can support two display devices, but there is no device detected as a second display, then the number 2 icon will be grayed out as in the example at the right.

The device that is selected under the **Display** list section (just below the monitor icon area) is shown as a bright icon, indicating that it represents the display now being configured.

The size of the display icons will change to reflect their current resolution (adjustable in the **Resolution** (XP Screen resolution) area).



Drag the icons to match your monitors.

(XP Drag the monitor icons to match the physical arrangement of your monitors.)

Position the cursor over a monitor icon, depress the left mouse button and hold it to drag the icon to a position that reflects the relative position of your display devices.

The display monitor icons can be positioned side by side or up and down. The position should reflect how you want to move items between monitors, and does not have to reflect the true physical arrangement.

(Note: this feature is not available from a Display Settings dialog which has been launched from the Options dropdown list menu on the S3 ScreenToys Device management page.)

Display list area

Click the down arrow to the right of the **Display** dropdown list to view the list of detected monitors. Click the line containing the number and description of the monitor you wish to configure in subsequent actions.

When you configure multiple monitor support, you can select which display is the “current” one for any settings you want to configure through **Display Settings Monitor** tab (XP Display Properties Settings tab).

This is my main monitor

(XP: Use this device as the primary monitor)

The Main or Primary Monitor provides the Primary View and is the monitor which displays logon, pop-up and message windows.

This checkbox will be grayed out and not available when:

- Only one display is available.
- Two displays are available and the currently selected Monitor is already the Primary or Main monitor.
- Two displays are available and you have selected **Extend the desktop onto this monitor** (XP Extend my Windows desktop).

When you have more than one display device enabled and all devices show the same view, you are in SingleView mode and the other devices are said to be a clone of the PrimaryView. The **Display** list area should report **(Multiple Monitors)** associated with Display 1. If you wish to designate the currently selected monitor as the Primary Monitor, check the checkbox. If you wish to designate another display as your Primary Monitor, you must first click on the display Monitor Icon associated with that display device. The **This is my main monitor** checkbox should then be available to designate the newly selected display as your Primary Monitor.



Extend the desktop onto this monitor

(XP Extend my Windows desktop onto this monitor)

If only one display is available, this checkbox will be checked but grayed out and not available for adjustment.

If you have two display devices detected, click the **Extend the desktop onto this monitor** checkbox to use both monitors in tandem as a single desktop image. After you enable **Extend the desktop onto this monitor**, you will be able to drag windows and icons across your screen onto the other monitors. You will also be able to stretch a window so that it shows on more than one display.

For example, you can view many columns of a spreadsheet stretched across two monitors, or you can easily view your web browser on one display and edit a document on a second display.

When you have extended the desktop, settings are specific to each view of the desktop. For each display, select resolution and color quality, just as you did previously for single displays.

Clear this checkbox if you have two monitors enabled and you want both monitors to display the same image (SingleView clone mode).

Refer to the Fine Tuning section on [Using Multiple Monitors](#) and [Enabling a Multiple Monitor Clone Display](#) for additional information on Multiple Displays.

Identify Monitors

(XP Identify)

Click **Identify Monitors** to post a large number 1 and 2 on your active displays to help identify which display is associated with which monitor icon.

How do I get the best display?

(XP Troubleshoot)

Click **How do I get the best display?** to launch Help windows (XP: Click **Troubleshoot** to launch the **Help and Support Center** window for the **Video Display Troubleshooter**) provided by the operating system. The information and dialogs will help you diagnose and resolve problems.



Advanced Settings

(XP Advanced)

Click on **Advanced Settings** to access operating system controls for display including at least:

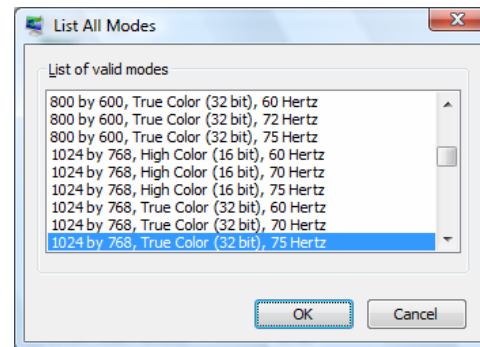
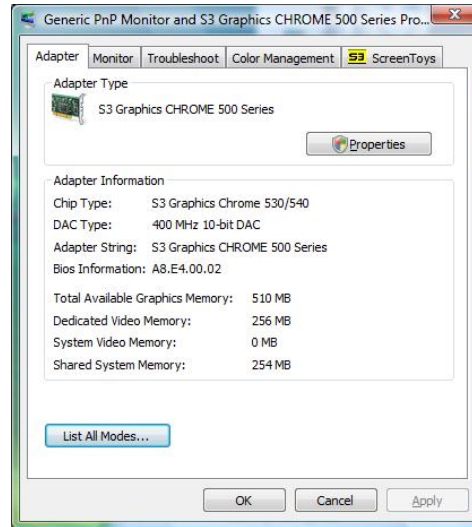
- General (XP only)
- Adapter
- Monitor
- Troubleshoot
- Color Management
- and
- S3 ScreenToys: The **S3 ScreenToys** tab includes the **CHROME Information** page with an **S3 Graphics ScreenToys** button which provides access to the tools and utilities.

4.3 Adjust Resolution, Color Quality and Refresh at the Same Time

The **Display Settings Advanced Adapter** page is provided by the operating system and provides access to general information about your Display Adapter.

Additionally, the **Adapter** tab provides a **List All Modes** box. You can use this box to change desktop graphics resolution, color quality and refresh rate simultaneously.

Click on **List All Modes**. A window will appear which lists all the combinations of screen resolution, colors, and refresh rates available for the selected video adapter.



4.4 Specify a Lower Color Quality for Older Applications

Selection of a 8 bit per pixel (256 color) mode is not recommended for the Windows Vista or Windows XP desktop. Many advanced applications require at least 16 bit per pixel for proper color rendering in applications for multimedia and gaming.

Windows Vista and Windows XP provide a **Program Compatibility Wizard** which allows you to set lower color quality or resolutions for older programs that may requires such.

To manually adjust program compatibility for older applications, right-click the application's program icon or name on your desktop or in the **Start** menu, then click **Properties**. Click the **Compatibility** tab, and then select the **Run in 256 colors** check box. Your monitor will revert to your default color setting when you close the program.



SECTION 5 MONITOR CONFIGURATION BASICS

This section details monitor related settings to configure for optimal use with your S3 Graphics display adapter, including:

- ➔ Monitor definition change
- ➔ Refresh rate adjustment
- ➔ Multiple monitor considerations
- ➔ Display device attachment and reconnection

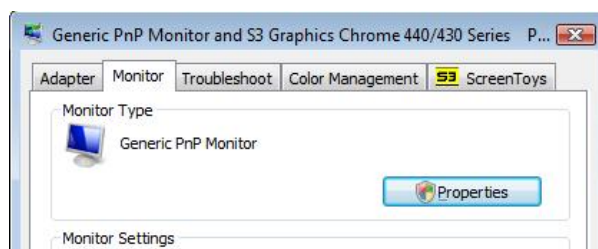
5.1 Monitor Definition

Windows should automatically detect your monitor or other display device. If Windows has identified your monitor as a PNP VESA DDC or an UNKNOWN monitor type, then you will not have access to the full capabilities of your monitor. Change the monitor definition to a definition that is compatible with your monitor model. Select a new definition from the list of monitor drivers provided by Windows or by downloading the latest **monitor.inf** file from your monitor manufacturer.



Caution: If the capabilities of your device are not reported to your S3 Graphics adapter, then you may not be able to manipulate some of the features discussed below. To take full advantage of your CRT, HDMI and DVI capabilities and to avoid the possible loss of transmission of configuration data between your monitor and your graphics board, whenever possible avoid switch boxes, BNC cables, or dongles when connecting your devices to your graphics board.

- Step 1.** Right click on any unpopulated area of the **Desktop**.
- Step 2.** Vista: Click **Personalize**. Click **Display Settings**. The **Display Settings** window appears open on the Monitor tab.
XP: Click **Properties**. The **Display Properties** window appears. Click **Settings** tab,
- Step 3.** Click **Advanced** button.
- Step 4.** Click **Monitor** tab, then click **Properties** button. Vista Administrator rights are required to proceed.



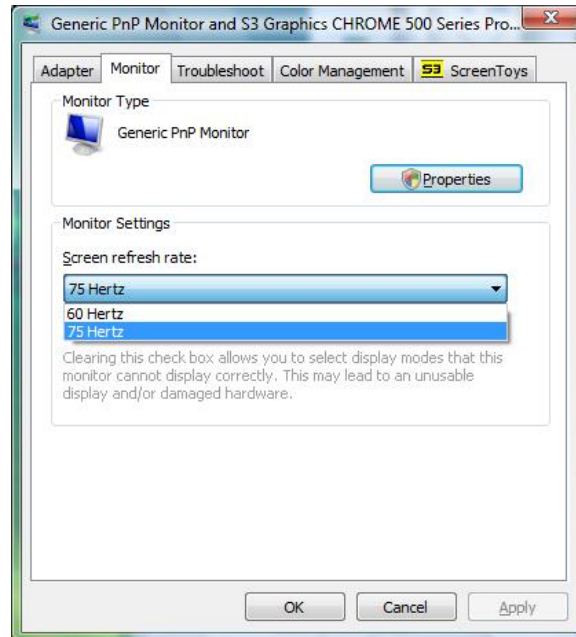
Step 5. Click **Driver** tab.

Step 6. Click **Update Driver** button. This launches the Windows **Hardware Update Wizard**. Follow the Windows Wizard directions to update your monitor software.

5.2 Refresh Rate Adjustment

Once your screen resolution, color quality and monitor settings are established, you can adjust your monitor's refresh rate to provide an optimized display with minimal screen flicker.

ACCESS: To adjust refresh rate, right click on the desktop, select **Personalize**. Click **Display Settings**. On the **Monitor** tab, click the **Advanced** button, then click the **Monitor** tab.



OPTIONS:

Monitor Settings area

Use this area to select a monitor refresh rate, and to control the availability of modes for selection.

Screen refresh rate dropdown list

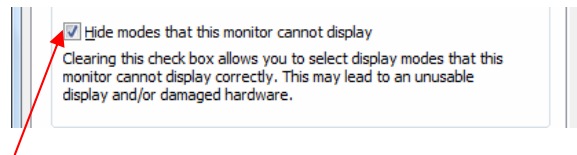
Click on the down arrow at the right of the screen refresh drop down list to view a list of refresh rates available. Click on the desired rate.

A higher rate will refresh your display more frequently, reducing screen flicker.

If you have a fixed frequency display, only one default refresh rate is usually available for selection.

Hide modes that this monitor cannot display

Click to select the checkbox labeled **Hide modes that this monitor cannot display**. When you select this checkbox (recommended), only modes and refresh rates supported by both the display output device and the display adapter are available for selection.



Read the important Windows caution message before selecting this checkbox. Administrator rights are required to change this checkbox.

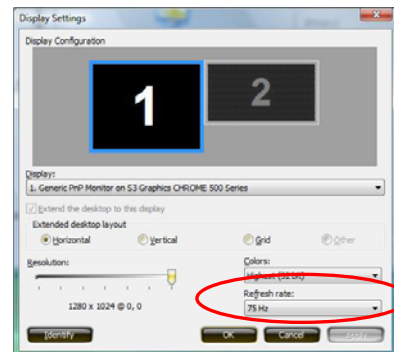
OK, Apply

To test your selection, click **Apply**. Make any necessary adjustments and click **Apply** again. When you are satisfied with your selections, click **OK** to exit.

Screen refresh rate, alternate access

REFRESH RATE NOTE: S3 Graphics ScreenToys provides enhanced refresh rate control designed especially for multiple display configurations.

ACCESS: To access this control, right click on an empty area of the desktop, select **S3 ScreenToys** tab. From the menu options on the left select **Device Management**. From the **Options** dropdown list on the right, select **Display settings....** This page has a **Refresh rate...** droplist which can be used to adjust refresh for the selected (blue outlined) display.



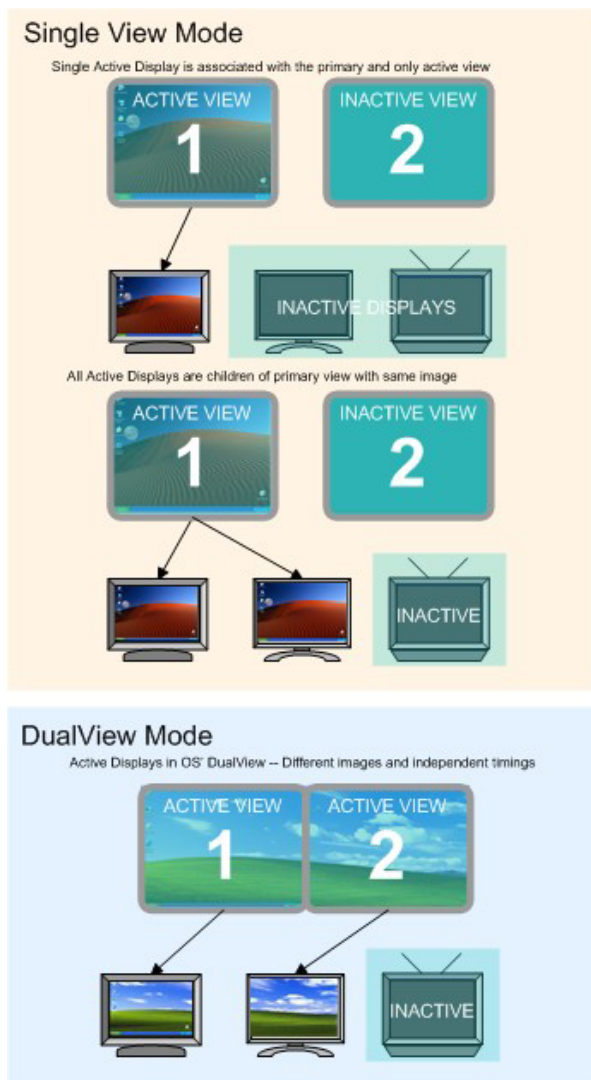
5.3 Using Multiple Monitors

The multiple monitor features available with Windows Vista and Windows XP allow multiple video cards to be active with each one displaying a different area of the entire desktop. S3 Graphics discrete GPUs are Dual Head devices. This means each device has two graphics engines, each of which is capable of providing independent display output. Windows Vista and Windows XP support the use of a single adapter to drive a multiple monitor configuration.

When the Windows operating system is in **SingleView**, there is a single view of the desktop image displayed, regardless of the number of monitors enabled. This single view of the desktop is sometimes referred to as the **Primary View**. There may be one (**Primary Monitor** or **Main Monitor**) or more display output devices (**Multiple Monitors**) associated with this single Primary View. These monitors are said to be “child devices” of the Primary View and provide a duplicate view, or clone view of the **Primary View**.

When in **SingleView**, the Primary View owns all of the child devices, and the (inactive) **Secondary View** owns none.

When you select **Extend the desktop onto this monitor**, DualView mode is enabled. The Windows desktop image is divided into two parts or views, the **Primary View** and the **Secondary View**. The **Display Settings** window shows you which output devices are associated with each desktop view. Windows **This is my main monitor** (XP: Use this device...) option allows you to specify which device you wish to display the **Primary View**.



5.3.1 Typical Display Device Combinations

Because S3 Graphics products are Dual Head devices, the single adapter can drive more than one output device. The following output devices and device combinations are those typically supported by S3 Graphics adapters and software on desktop configurations. Additional combinations may be possible with specialized hardware. Your hardware will not have connections to detect and support all these combinations:

- ➔ CRT
- ➔ DVI
- ➔ HDMI
- ➔ Dual display combinations (board-dependent), for example, DVI + CRT, DVI + HDMI, HDMI + CRT, DVI + DVI, HDMI + HDMI, and others
- ➔ Multiple adapter multiple display combinations to the extent supported by the operating system.

Mobile systems include at least a LCD display output device. Additional output devices that could be supported for mobile environments by your S3 Graphics adapter and software include: DVI, HDMI, CRT. Your hardware may not have connections to detect and support all these devices.

The operating system provides some configuration controls for multiple display devices through the **Display Settings** page. Additional control is provided by the S3 Graphics **S3 ScreenToys Device Management** tool which provides independent setting control for each connected monitor. Your selected settings are saved automatically on exit. When you resume from power down, suspend/standby, or monitor off, the settings will remain the same.

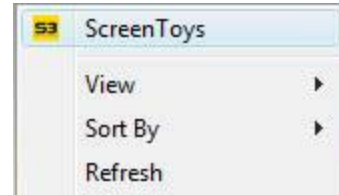
5.3.2 Enabling a Multiple Monitor Clone Display

To extend the desktop onto a second monitor, use the operating system **Display Settings** page [Extend the desktop option](#).

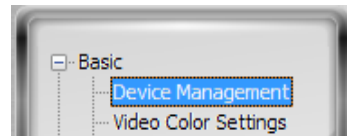
To enable a Multiple Monitor Clone desktop, where the secondary display shows an image duplicate of the primary screen, you must use **S3 ScreenToys**. This configuration is required for [ChromoVision](#) full screen video.

To enable a Multiple Monitor Clone desktop,

Step 1. Right click on the desktop. Select **S3 Screen Toys**.



Step 2. From the left panel menu, select **Device Management**



Step 3. In the **Display Devices:** area click on the checkbox below the display device you want to become the Child or Clone copy of the current desktop. In the example below the second CRT2 device is going to be added as a Clone child of the primary CRT display device.



Step 4. Click the **Apply All** button at the bottom of the window.



Step 5. Two messages to confirm your change will appear. Click **OK** and **Yes** to confirm.

Step 6. After the clone display is enabled, S3 Screen Toys Device Management Display Devices will report the following:



Step 7. To revert to a single desktop display device, uncheck the box below the clone device. The Status will report “**will be disabled.**” Click **Apply All** to complete the action.

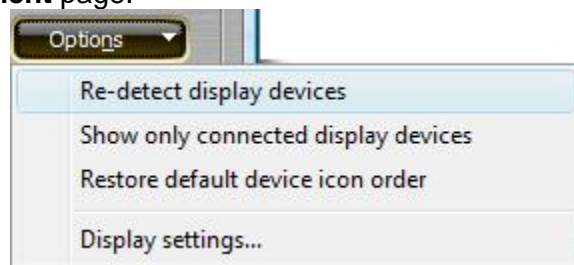
5.3.3 Display Device Attachment and Detection

A device must be detected as connected and enabled before it can be configured through **S3 ScreenToys Device Management**.

Devices can be added or removed in a hot-plug or hot unplug manner.

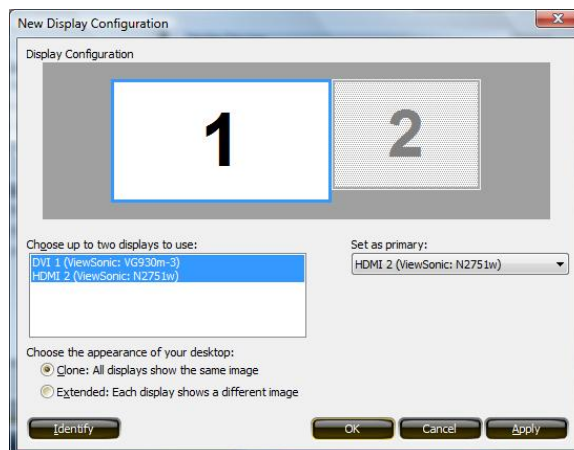
5.3.3.1 Force a re-enumeration

A re-enumeration of display devices can be done at any time by checking the **Re-detect display devices** under **Options** dropdown list on the **S3 ScreenToys Device Management** page.



5.3.3.2 New Display Device Configuration

If a device is removed or attached while the system is active, S3 Graphics software will attempt to restore a previously saved configuration that matches the new connected devices. However, if the S3 Graphics software has no existing record of your preferences for a newly attached configuration, it may pop up a **New Display Configuration** dialog.



5.3.3.3 Step by Step Display Device Attachment

Windows XP has a less robust detection scheme than Windows Vista. If a re-enumeration fails, and you wish to attach a new or second display output device to your Windows XP system, use of the following procedure is recommended.

- Step 1.** While the system is powered off and unplugged, attach a new or second display output device to your graphics board.
- Step 2.** Reconnect your cables. Power the new display device.
- Step 3.** Reboot the system.
- Step 4.** Install any display or monitor drivers needed.



SECTION 6 S3 SCREENTOYS BASICS

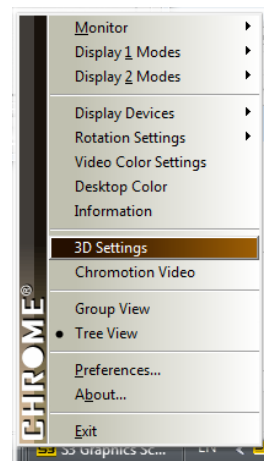
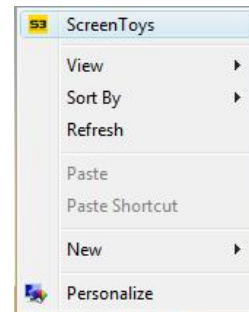
For advanced option adjustments for your display adapter, the **S3 Graphics ScreenToys** dialogs should be used.

This section details basic access and navigation for the S3 ScreenToys tools. Also, typical page layout and common controls are outlined for the S3 ScreenToys dialog pages.

6.1 Basic Navigation to S3 ScreenToys

ACCESS: There are many ways to open the **S3 ScreenToys** dialog pages:

- ➔ Right click in any unpopulated area of the **Desktop**. A pop-up menu will appear. Click **S3 ScreenToys**.
or
- ➔ Double-click on the S3 **CHROME®** taskbar icon  to launch the **S3 ScreenToys** utility control dialog window. or
- ➔ Right click on the S3 **CHROME®** taskbar icon  to show the S3 **CHROME®** menu. Select the desired option to launch a **S3 ScreenToys** utility control, for example, select **Desktop Color**.
or
- ➔ Click **Start**.
 - Vista: Click **Control Panel**,
 - From **Control Panel Home**, click **Appearance and Personalization**, (or from **Classic View**), click **Personalization**, then **Display Settings**. Click **Advanced Settings**. Then click **S3 ScreenToys** tab and **S3 ScreenToys** button.
 - XP: Click **Settings**, then **Control Panel**. Double-click the **Display** icon in the Control Panel folder. Or
- ➔ Right click in any unpopulated area of the **Desktop**. Click **Personalize** (XP: Properties). Click **Display Settings** (XP: Settings). Click **Advanced Settings...** (XP: Advanced), then click the **S3 ScreenToys** tab. Click the button in the lower portion of the dialog window labeled **S3 ScreenToys** to access the S3 Graphics utility software.



6.2 S3 ScreenToys Dialog Basics

This section discusses the many elements of the S3 ScreenToys dialog windows which are consistent across all the S3 ScreenToys pages.



OPTIONS: The S3 ScreenToys window has the following key components.

6.2.1 Title Bar and Banner

Title bars and Banner

The **S3 Graphics ScreenToys** banners identify the tool with text and graphics.

Window title

The window title bar will contain a logo bitmap and the phrase **S3 Graphics ScreenToys**.

S3 ScreenToys logo

The application banner will contain text and graphics. A S3 ScreenToys bitmap will appear in the upper left corner of the banner. Click on the bitmap to launch your browser and hyperlink to www.s3graphics.com.

Banner title

The large font text in the banner area will contain the name of the currently selected utility. Short descriptive text for that utility will appear below the larger text.



6.2.2 Monitors List

The area just below the banner contains access to important configuration aids.

Monitors dropdown list

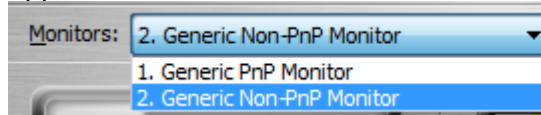
The left side of the S3 ScreenToys window includes a dropdown list for display selection.

Monitors: dropdown list

If you have only one monitor connected and active in your system, or you have two devices acting in duplicate or clone mode, this option will be dimmed and unavailable for selection.



If you have more than one enabled and connected device, this dropdown list allows you to specify to which monitor the new configurations settings should be applied.



Click the ▼ arrow to the right of the **Monitors:** dropdown list menu to show all connected display output devices (monitors). Each display device is shown as “Monitors: N. Display device name”, where N is a number starting from 1. Select the device whose desktop color you wish to configure.

Note: Not all ScreenToys tools and settings are monitor specific. Monitor specific menu items include:

- Device Management
- Rotation
- Desktop Color

Other tools have settings which are applied globally, regardless of which display is currently selected. For these tools the Monitors dropdown list remains available for selection, even though it may not be relevant for the global setting under adjustment.

6.2.3 Buttons

S3 ScreenToys has many buttons to provide easy access. Buttons can be roughly grouped into four categories:

- **Bottom Buttons:** these buttons appear at the bottom of a dialog window and are used to Apply, Cancel, or Undo setting values, to restore defaults or to close the window.
- **Personalization Setting Buttons:** these buttons appear at the top of the main S3 ScreenToys window and allow you open dialogs which provide customizable options for Hotkeys and S3 ScreenToys menu behaviors. Also, some individual utility pages have **Save as...** buttons which allow you to save a personalized setting profile.
- **Access Buttons:** these buttons provide access to dialog pages or added information which provide additional controls.
- **Slider Reset Buttons:** these small buttons (without text) allow restoration of slider values to their default.

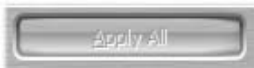
6.2.3.1 Button Appearance

Button color

The color of a button tells whether or not the option identified by the button text is available for selection.

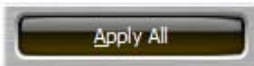


Grey



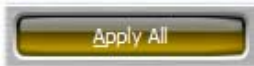
Not available

Black



Available

Light Yellow



Hover

Bright Yellow



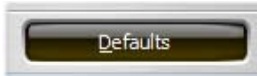
Clicked - active

6.2.3.2 Command Buttons in Footer

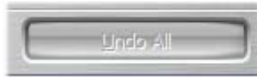
Footer area Command buttons The bottom footer area of the S3 ScreenToys window usually contains 4 buttons.



Defaults



Click **Defaults** to return the status values in the settings area of the current page to the default. This button does not affect settings on the other S3 ScreenToys pages which are not visible.



If **Apply All** or **Undo All** appears dimmed and not selectable, it is unavailable because you have not yet made any changes on any of the utility pages.

change asterisk

If you make changes to any utility menu page an asterisk * will be appended to end of menu page name. The asterisk will disappear when you click **Apply All** to implement your change.



Apply All



If you make changes on one or more pages in S3 ScreenToys and you then click **Apply All**, all changes you made on every page will be applied.

Undo All



Undo All cancels all changes made on any page during this session since the last Apply All. Your settings return to the values last saved or last applied.

6.2.4 Window Exit

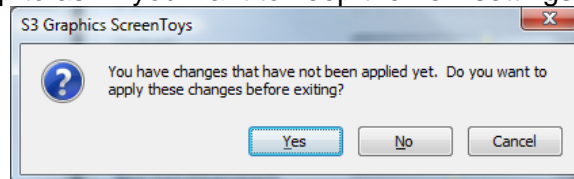
Window control

Exit



(= minimize button)

When you click **Exit** and you have made adjustments but not clicked Apply All to apply them, a dialog box will pop up to ask if you want to keep the new settings.



Click **Yes** and all changes you made on every page during this session will be applied.


Click **No** and all changes you made (but did not yet



Apply) on every page during this session will be canceled and will revert to back to the values last saved or last applied.

Then the S3 ScreenToys window will be minimized. The S3 ScreenToys taskbar icon will remain in the taskbar. Click **Cancel** to close the dialog but keep the S3 ScreenToys window open on the desktop.

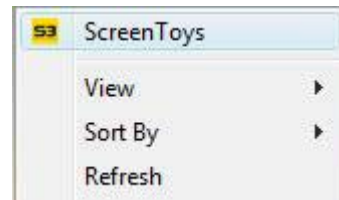
Close

When you click on the white  in the upper right corner of the S3 ScreenToys dialog window and you have un-applied changes, no dialog box will pop. The window will close and unapplied adjustments will be lost.

Restore

To re-open the dialog or to restore the taskbar menu and icon:

Right click on an empty portion of the desktop and click on S3 ScreenToys.



6.2.4.1 Buttons for Hotkeys and Preferences

Customization buttons

The upper right corner of the S3 ScreenToys window includes buttons for preference customizations.

Hotkeys button

Click on the Hotkey button to open the S3Hotkey dialog.

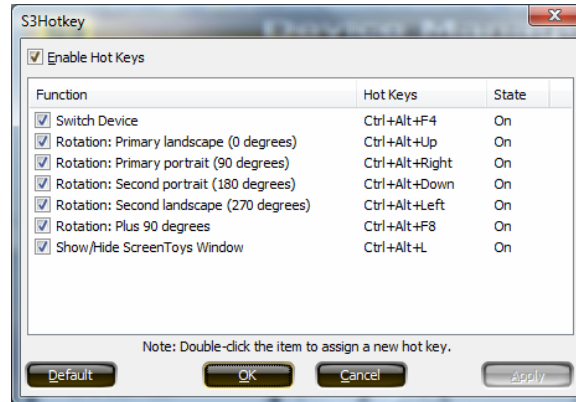


Preferences button

Click on the Preferences button to open the Preferences dialog to set options for the way S3 ScreenToys windows and menus behave. Refer to [CHROME® Menu General Settings](#) for details.

6.2.4.2 Hotkeys Control

S3Hotkeys provide customization of display-related hotkeys.



S3Hotkey window The S3Hotkey dialog window allows control and customization of display-related hotkeys.

Enable Hot Keys checkbox

When the **Enable Hot Keys** checkbox is checked (default), hot keys functionality is available to use at any time.

Only those hotkeys whose Status is On will actually be available.

If a hotkey has a status of Off, it will not be available. On double-click the following dialog appears where you can input a new preferred hot key sequence.

Function checkboxes

Each hotkey function has a checkbox. By default most hotkeys will be enabled if supported by the configuration.

- When enabled, the checkbox is checked, and the State is On.
- When a checkbox is unchecked, the State for that hotkey will be Off and the hot key will not be available for use.

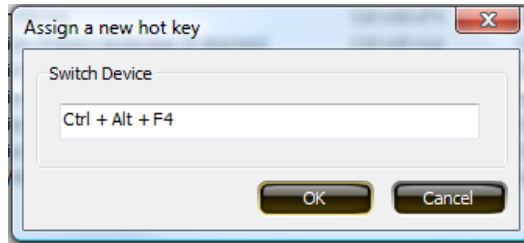
Available hotkeys may vary. Some typical hotkey options include:

- Rotation: 5 hotkeys
- Device Switch: 1 hotkey
- Show/Hide ScreenToys Window: 1 hotkey

Use **OK** or **Apply** to finish a change in state for a hot key.

To change a hotkey sequence

Double-click a hotkey row in the dialog window and the following dialog appears. You can input a new preferred hot key sequence for the hotkey named above the fill in text box.



You must use at least one control key (CTRL, SHIFT and/or ALT) followed by another key.

If the key combination you selected is already in use, a dialog will tell you.



Click **OK** to make your change, or **Cancel** to exit without change.

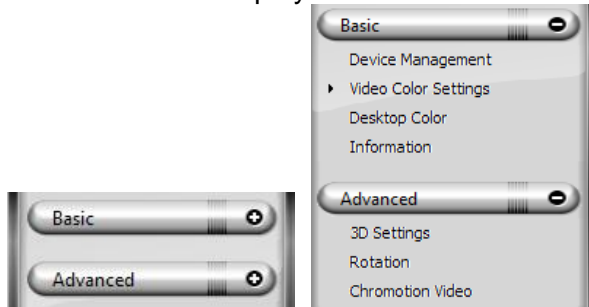
6.2.5 Left Menus

Left Panel Menu The left side of the S3 ScreenToys window contains selection items for display and utility.

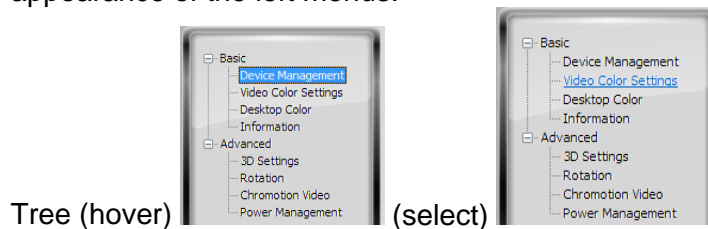
Basic and Advanced dropdown lists

These two dropdown lists contain the Basic and Advanced utility menu items available for further configuration.

Use the Menu Expand  and the Menu Hide  buttons to control the display of menu items.



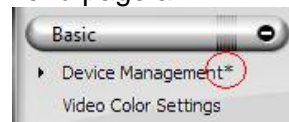
The default view of the menu lists is **Group View** (shown above). You can select the alternate **Tree View** option from the **CHROME®** menu to change the appearance of the left menus:



When hovering over the menu in either view, the target selection will have blue letters and a blue underline. Selected items appear with blue highlight while you are in the menu area, but once you click on the right portion of the dialog area, the blue highlight will disappear. In the group view a black right arrowhead (▶) indicates the selected page.

change asterisk

If you make changes to any utility menu page an asterisk * will be appended to end of menu page name. The asterisk will disappear when you click **Apply All** or **Undo All**.



6.2.6 Right Panel Controls

6.2.6.1 Shortcut Keys

The right main panel contains the adjustable settings for the S3 ScreenToys utility named in the banner, and selected in the left panel utility dropdown lists.

Settings Area Utility content will vary, and utility-specific context menus and tips are available.

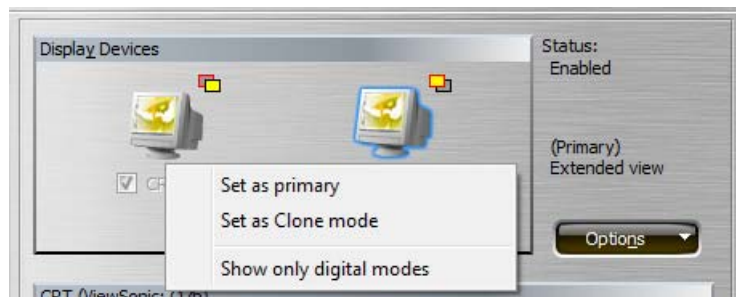
Alt+Shortcut Keys Shortcut keys for menu items are indicated by an underlined letter in the string. Press the **Alt** key down and then press the indicated letter to invoke the command.

In the example below (from the Device Management page):

Alt+m switches the focus to the Monitors droplist.

Alt+y is the shortcut keyboard key that switches the focus to the Display Device area:

Alt+n makes the Options dropdown list appear.



Other shortcut keys which appear on most S3 ScreenToys pages are:

Alt+a is for Apply All.

Alt+u for Undo All.

Alt+d resets values to their defaults. (note: the display may go black while values are being reset).

Alt+e exits the S3 ScreenToys page.

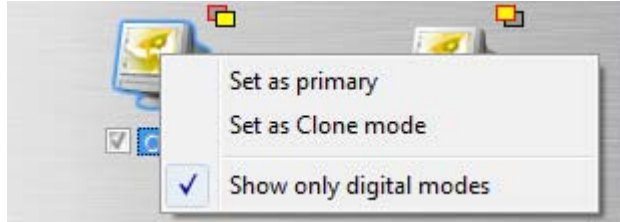
Shortcut keys are not case sensitive.

Though there is not an overlap in the shortcut key definitions among the S3 ScreenToys menus, you must be on the appropriate page before activating the shortcut key for it to take effect.

6.2.6.2 Context Menus and Tooltips

Context Menu

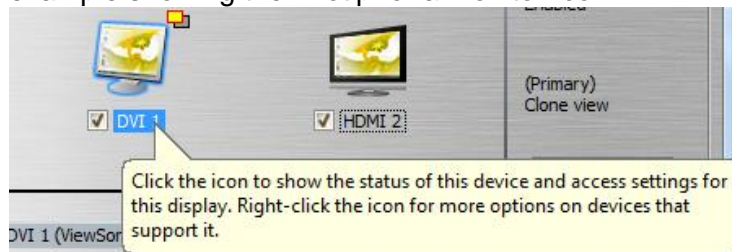
Context menu appearance may vary between operating systems. These menus display on a right click when the pointer is positioned on top of an item. For example, here is a context menu for the Device Management CRT icon:



Tip: Whenever a right-click menu is available for the item underneath the hovering cursor, the cursor will change to a cursor with a small mouse image with the right button in red.

Tooltips and Infotips

These tips display on pointer hover for Windows Vista. For Windows XP right click. To view a description of an item or selection option on any page of **S3 ScreenToys** or the **Display Settings Monitor** area or **Advanced** tab, first make the window active by clicking in the page or on the title bar. Next position the pointer on top of the item. In approximately 1 second a description line, box, or balloon will appear (if a Tooltip or Infotip is available for the item). Move the pointer into the tooltip area to make the tip stay on your screen. Move the pointer away from the area to make the tip disappear. Below is an example showing the Infotip for a Monitor Icon:



6.2.6.3 Sliders

Sliders

Slider colors

Some advanced adjustments are made using a slider which can be moved to the left or right to change a value within a range. When a slider is selected, it will have an outline around it. The intensity and outline color of the tab on the slider will vary depending on pointer activity:



Light: Pointer is hovering over the slider tab.

Gray outline: Normal

Intense: Pointer is holding or dragging the slider tab. An Infotip may also appear to show the slider value.

Sliders

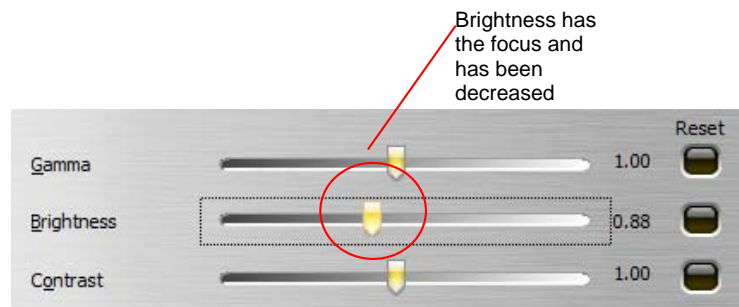
To use a slider:

Click on the slider bar. A dotted line around the bar will appear indicating it has the focus and is available for adjustment.

Drag the slider along the bar to adjust.

- Move to right to increase the value being adjusted.
- Move to left to decrease the value being adjusted.

When moving a slider, a value will appear just below the depressed cursor. The value will indicate the current value.



To return an adjustment to its default value, click the black button on the right of each slider bar. The other two slide bar values will not be affected.

To use a keyboard to adjust a slider bar value:

- Right arrow or Up arrow increases the value.
- Left arrow or Down arrow decreases the value.

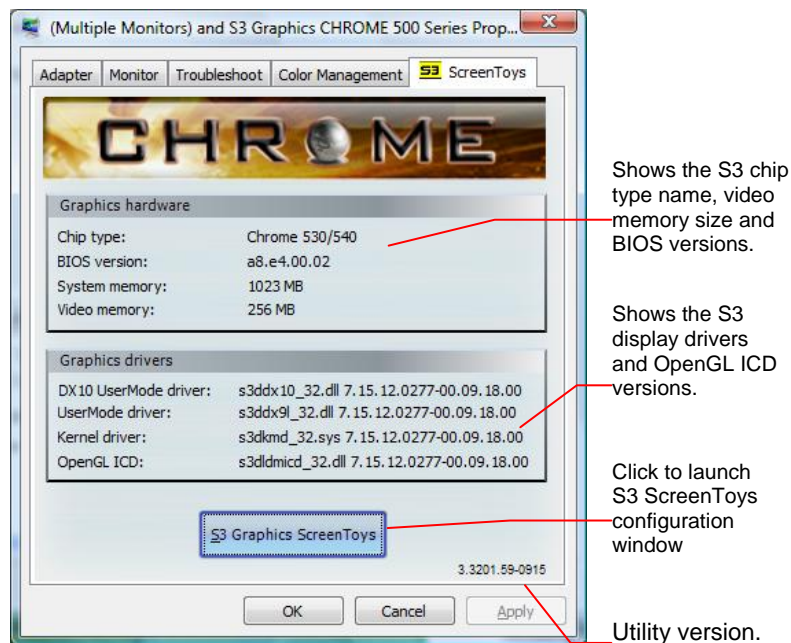
The current value for each slider is displayed on the right.

6.3 S3 ScreenToys Tab

This informational tab includes a button to access the **S3 ScreenToys** dialog window.

ACCESS: To open the advanced **ScreenToys** tab, right click in any unpopulated area of the **Desktop**. Click **Personalize**. Click **Display Settings**. (XP: Click Properties/ Settings). Click **Advanced Settings...** (XP: Advanced), then click the **S3 ScreenToys** tab.

Note: To access the system configuration and driver information on this tab page from the **S3** taskbar icon or **CHROME®** menu, click **Information**, which also will contain additional details about your adapter's environment.



OPTIONS: The **S3 ScreenToys** tab areas include:

Logo area	This area contains a graphic.
Graphics hardware	This area includes information related to the graphics, system and BIOS configuration.
Chip type	Shows the S3 Graphics chip type name.
BIOS version	Shows the S3 Graphics video BIOS version.
System memory	Shows the amount of detected system memory.
Video memory	Shows the amount of detected video memory.



Graphics drivers area This area includes information about the display drivers.

DX10 UserMode driver and UserMode driver Shows the S3 Graphics Windows Vista User Mode display driver filenames and version numbers. Driver version numbers are divided into two portions separated by a hyphen. The first portion is the version number following Microsoft's conventional format. The portion after the hyphen is S3 Graphics internal version number.

Kernel driver Shows the S3 Graphics Windows Vista Kernel Mode driver filename and version number.

OpenGL ICD Shows the S3 Graphics Installable Client Driver for OpenGL filename and version number.

Other

S3 Graphics ScreenToys Click on the **S3 Graphics ScreenToys** button to launch the S3 Graphics ScreenToys configuration windows.

Version Displays the current version number of the page.

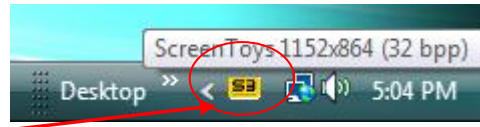
Apply This utility page is information-only. Therefore, the Apply button will be dimmed and unavailable.


OK, Cancel Click **OK** or **Cancel** to exit the tabbed page and return to **Display Settings**.




6.4 S3 Taskbar Icon

S3 Graphics software packages include a taskbar icon giving you reduced-click access to S3 Graphics display configuration options and utility windows.



The **CHROME®** menu is accessible through the taskbar icon which appears as the S3 logo represented by a black “S3” on a yellowish background .

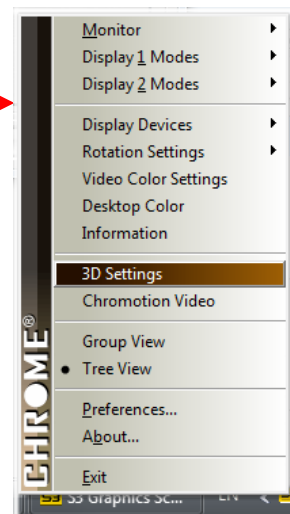
- A left click on the icon will launch the **S3 ScreenToys Device Management** window.
- A single right click on the icon will bring up the **CHROME®** taskbar menu. 

Click to select any option from the menu.

To clear the menu from the screen, click anywhere on the desktop to close but not deactivate the menu.

If you want to deactivate the menu and taskbar icon, select **Exit**. The menu and taskbar icon are automatically reactivated when you right click on the desktop and select **S3 ScreenToys**.

To launch a related S3 ScreenToys page, select the appropriate menu item, such as Display Devices, Desktop Color, 3D Settings, Video Color Settings, Chromotion Video or Information.



Directly select submenu options for Monitors, Display modes, Display Devices and Rotation Settings. This provides reduced click access by initiating the change without requesting confirmation from you.

Selection of a sub-menu feature will toggle the feature ON (enabled) or OFF (disabled). A check on the left of the feature name indicates that the feature is ON (enabled).

Caution: Unpredictable results may occur when attempting to change display and utility settings through the **CHROME®** menu when either the **Display Settings** dialog window or the **S3 ScreenToys Device Management** window is also open. To avoid sending conflicting requests to S3 Graphics software, always close any open **Display Settings** or **S3 ScreenToys** windows first before proceeding with display control adjustments using the **CHROME®** menu.

6.5 CHROME® Menu

6.5.1 CHROME® Menu General Settings

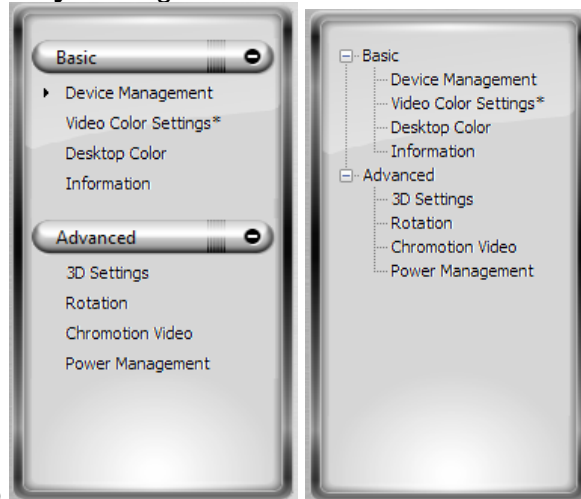
CHROME® menu: general settings These items provide general information about the **S3 ScreenToys** and **CHROME®** Menu.

Information

Click **Information** to launch the **S3 ScreenToys Information** page which provides copyright and version information about the system environment and installed S3 Graphics software. Some of this information is the same as provided on the **Display Settings Advanced S3 ScreenToys** tab page. A vertical scroll bar is provided to allow access to all the information provided.

Group View Tree View

Select **Group View** or **Tree View** to change the appearance of the menus in the left column of the **S3 ScreenToys** dialog windows.



Group

Tree

Preferences

Select Preferences to show configuration options for S3 ScreenToys menu and dialog display. See Preferences for further detail.

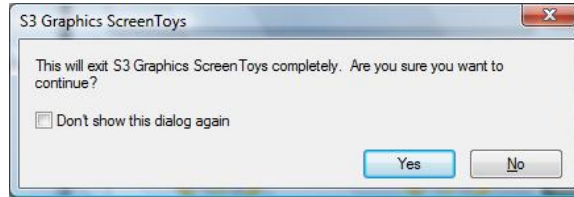
About

Select About to show a dialog window which contains a description for S3 ScreenToys as well as version and copyright information.



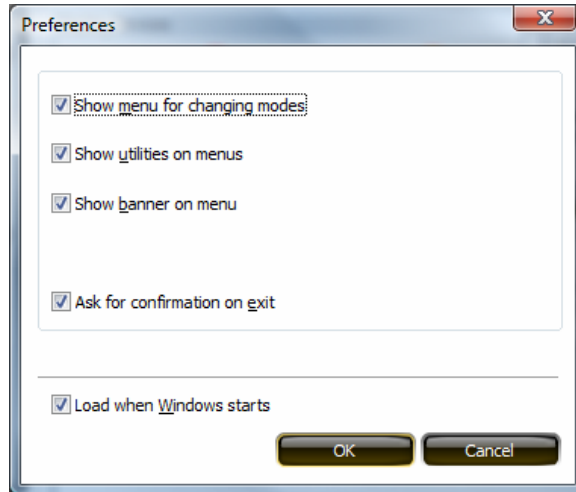
Exit

Click **Exit** to deactivate the **S3** taskbar icon and close the **CHROME®** menu. A dialog box may pop up asking if you want to exit completely. Click **Yes** to exit completely.

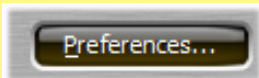


To re-activate the S3 taskbar icon and **CHROME®** menu, simply right click on the desktop and select **S3 ScreenToys**.

6.5.2 CHROME® Menu and S3 ScreenToys Preferences



Preferences



Preferences options allow control of options for customizing the behavior of S3 ScreenToys menu and window items.

The Preferences dialog can be selected from a button on the upper right of the main S3ScreenToys page, or from the CHROME® taskbar menu.

Show menu for changing modes

Check the **Show menu for changing modes** box to enable access to the lists of desktop Display Modes, stated in combinations of supported screen resolutions and color qualities, for each available display output device.

Clear the checkbox to disable this option. When disabled, the menu will not have the Display Modes items and will look similar to the image to the right.

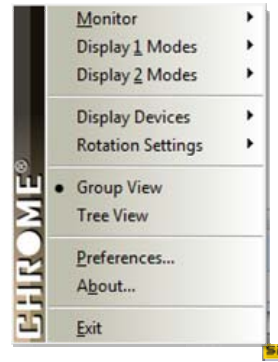


See the section on [CHROME Menu for Display Modes](#) for further detail on this feature when enabled.

Show utilities on menus

Clear the checkbox to disable this option.

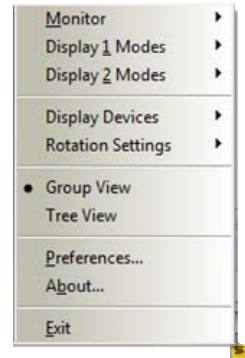
When the checkbox is not checked, your CHROME® menu will appear similar to the sample on the right. You can still access all the utilities from S3 ScreenToys windows available when you right click on an empty area of the **Desktop**, then click **S3 ScreenToys**.



Show banner on menu

Select **Show banner on menu** to show a vertical banner on the left side of the CHROME taskbar menu. The banner is shown by default.

Clear the checkbox to disable this feature.



Ask for confirmation on exit

Select this option if you want S3 ScreenToys to display a confirmation dialog window when you click **Exit** (from the S3 ScreenToys window or from the CHROME taskbar menu). The dialog will ask you to confirm that you want to change any unapplied display settings you have made during this session.


Clear the checkbox to disable this feature.

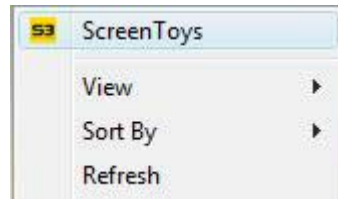
**Load when
Windows starts**

Select **Load when Windows starts** to load S3 ScreenToys taskbar icon whenever Windows starts. The initial default setting is checked (enabled), and the CHROME® taskbar icon will load on restart, and the S3 ScreenToys item will appear on desktop right-click.

Clear the checkbox and the taskbar icon will not automatically load the next time Windows starts. Note that the desktop right-click context menu for S3 ScreenToys is not affected by this setting, and will always be available.

If you disable **Load when Windows starts**, here is a method to restore the CHROME taskbar icon and menu:

Right click on the desktop. Click on **ScreenToys**. Click on the white  in the upper corner to close the S3 ScreenToys window.



Note that the **S3 ScreenToys** icon will now appear in the taskbar.

OK, Cancel

Click **OK** to apply your changes or **Cancel** to exit without changes.

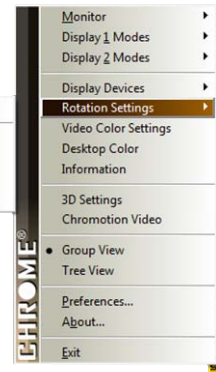
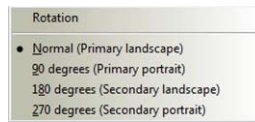
6.5.3 CHROME® Menu Access to S3 ScreenToys

Utility Access area Available S3 Graphics utilities will be listed in this area.

If you have enabled **Extend the desktop** in **Display Settings**, any configuration options you make through this list will apply to **Display 1** or **Display 2**, as selected in the row above this area.

Video Color Settings, Desktop Color, 3D Settings, Chromotion Video,

Click on a utility name to open that utility window directly. The utility window looks and behaves the same as the one you would see if you opened it through the S3 ScreenToys desktop menu option. Access by either method is quicker than from the **Display Settings Advanced** window.



Menu items with a right arrowhead (▶), such as **Rotation Settings**, include submenus with direct access to utility options. The top item listed in the submenu will open the utility window. Direct “fast-action” items are listed below the top item. Click on any submenu item to instantly adjust your configuration to the menu setting listed. For example, Rotation options are directly accessible. When you click on a rotation option that is different from your current setting, your screen will immediately rotate to the new orientation. Options are applied to the currently selected display device as described above.

After a utility is selected, you can use either the **CHROME®** menu or the **S3 ScreenToys** left menu panel to switch to another utility in the suite.

Refer to [S3 ScreenToys Basics](#) for additional detail on common features of the ScreenToys setting windows.

6.5.4 CHROME® Menu for Display Devices and Modes

Monitor

Use this area to toggle between selected displays.

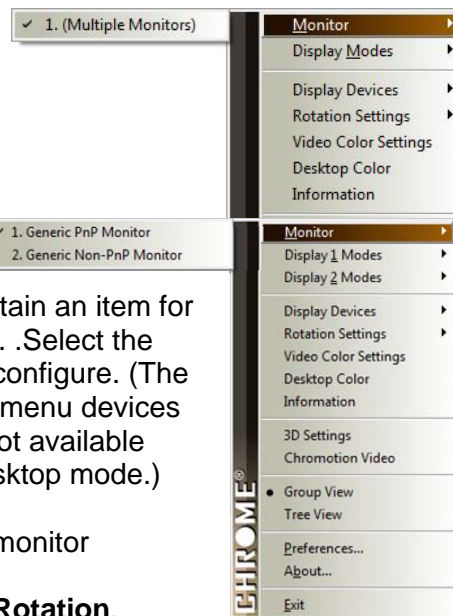
- ✓ 1. xxx Monitor
- 2. xxx Monitor

A check ✓ indicates which display is selected for configuration with the display specific utilities listed in the **CHROME®** menu and **S3 ScreenToys** pages.

If two monitors are available for configuration:

If you are in clone mode, the **Monitor** submenu will contain one item **1. (Multiple Monitors)**. Then you must use the **Display**

Devices submenu (described below) to select the device you wish to configure.



If you are in Extended desktop mode, the list will contain an item for each attached device. Select the **Monitor** you wish to configure. (The **Display Devices** submenu devices will be dimmed and not available while in Extended desktop mode.)

Pages which have a monitor dependency include:

Rotation Settings ▶ **Rotation**,
Display Devices ▶ **Device Management**,
and
Desktop Color.

Display Devices

Use this menu group to launch the **Device Management** settings window of **S3 ScreenToys** or to toggle between configurable devices when in Multiple Monitor clone mode.

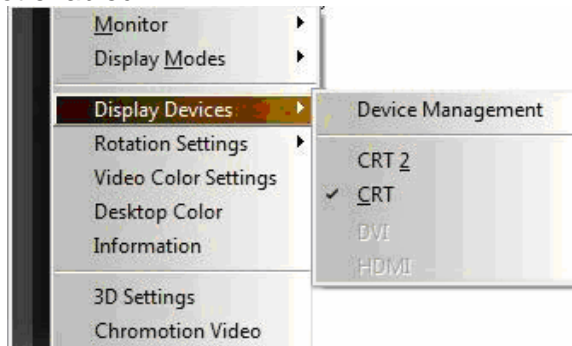
Device Management

Click to launch the **S3 ScreenToys Device Management** settings window. Refer to the: [Device Management](#) description for additional detail.

Devices types list

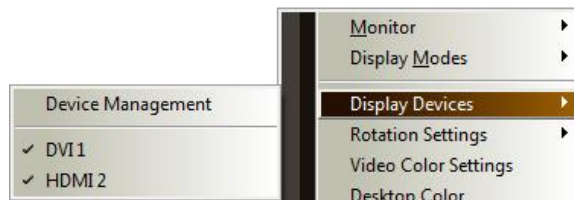
Click to select a device for current configuration when in Multiple Monitor clone mode.

If you have unchecked the Options menu item Show only connected display devices. Then the device option will show all possible display options compatible with your hardware, including those which are not connected and not enabled.



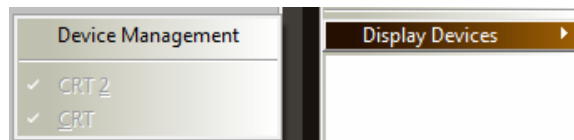
If you have two displays, for example:

- Multiple Monitor configuration with one of the connected devices disabled (see above where only CRT device is selected).
- Multiple Monitor configuration in clone mode with both Devices selected:



This option will be dimmed and unavailable for selection:

- if you have only one monitor connected and enabled in your system.
- If you are in an Extended mode Multiple Monitor configuration. While they are in Extended desktop mode, device selection should be done through the **Monitor** submenu|



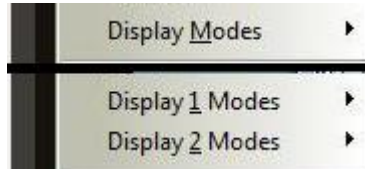
Display modes area

Use these submenus for changing display screen resolution and color quality for a single connected device.

When multiple monitors are configurable, there will be a mode list submenu for each display.

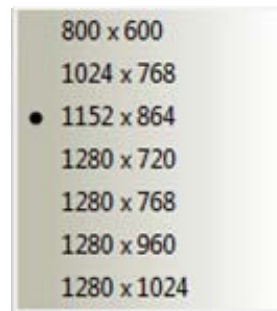
Display Modes Display 1 Modes Display 2 Modes submenus

Select **Display Modes** to access a list of supported desktop modes for the configurable display device.



If more than one display is enabled and configurable there will be both a **Display 1 Modes** and a **Display 2 Modes** submenu.

The modes that are displayed in the list should be the same as the ones listed in **Display Settings** page. The list shows the available screen sizes, grouped by the number of colors. Each available display mode has its own entry in the menu, in the form "<width> x <height>." For example, the first mode might be "800x600." The current display mode is marked with a dot • or diamond.



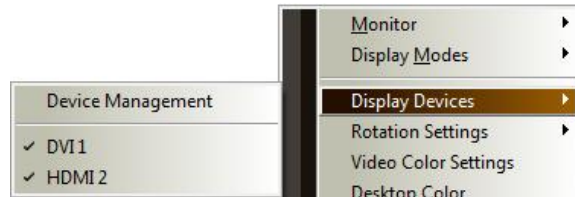
A new list is generated every time you click on the menu item. For example, available modes change for some rotation states, so the list of modes may change after you rotate your image. Also, if the "**Hide modes that this monitor cannot display**" option is checked in **Display Settings Advanced Monitor**, then the **CHROME®** taskbar menu will only show the modes that can be displayed. Similarly, if that option is unchecked, then the **CHROME®** menu will display all the modes supported by the driver, regardless of whether the monitor supports them.

To change the display to another mode, first click the color depth you want (16bpp or 32bpp), then click the mode with the screen size and number of colors you want. Depending on your operating system, you may be

asked to confirm your choice. The software may ask to restart your computer if the number of colors changes.

Display Modes
(for 2 devices in multiple monitor clone mode)

If two display devices are connected and configured for clone mode, then the **CHROME® Monitor** menu will display **1. (Multiple Monitors)**.



The monitors to be affected by changes to Display Modes are controlled through the **CHROME Display Devices** menu.

Before selecting your new mode, first open **Display Devices** and click one or both of the monitor options. For example to change the mode for an attached **DVI** and **HDMI**, check both devices. Then select **Display Modes**. The modes available will represent only those modes supported by both devices.



If only one display is checked in the **Display Devices** submenu, then the **Display Modes** available will be the list appropriate for the checked device.

Display Modes
(for extended desktop configurations)

When in Extended desktop, there will be both **Display 1 Modes** and **Display 2 Modes** submenus. **Display 1 Modes** submenu provides a list of supported desktop modes for the display device which owns the Primary View of your desktop. **Display 2 Modes** will provide a separate list for the secondary display.

Make your independent mode selection for each display. Select **Display 1 Modes** or **Display 2 Modes**, then select the number of colors, then select the screen size.


Depending on your operating system, you may be asked to confirm your choice. The software may ask to restart your computer if the number of colors changes.

SECTION 7 S3 SCREENTOYS DEVICE MANAGEMENT

This section details the S3 ScreenToys controls for display device configuration and management.

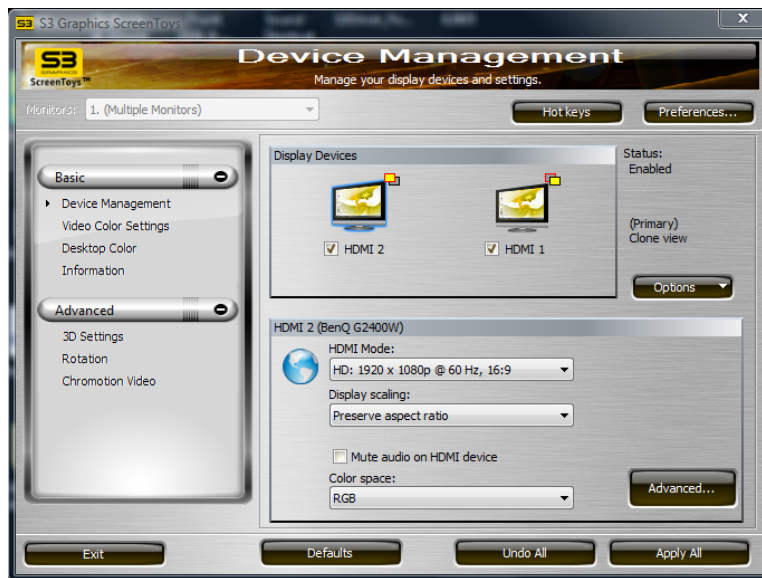
7.1 S3 ScreenToys Device Management Display Controls

ACCESS: To adjust display device settings for active displays, right click on an empty area of the desktop to activate the pop-up menu, then click **S3 ScreenToys**.

Alternately, click on the **S3**  tray icon, select **Display Devices**, then **Device Management** from the **CHROME®** menu.

From the menu on the left of the dialog window, select **Basic**, then **Device Management** to show the **S3 ScreenToys Device Management** dialog window.

SELECT A DEVICE: Find the display device icon for the item you wish to configure and click on the checkbox underneath to select. Click on the icon to show options for configuration of that device in the lower **Device Settings** area.



OPTIONS: S3 ScreenToys Device Management offers the following display configuration options:

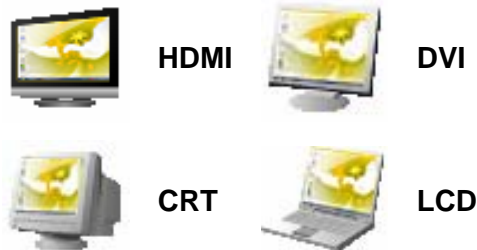
7.1.1 Display Icons

Display Devices area

This area contains icons and checkboxes for supported display devices.

Display Device Icons

The Display Devices area contains Display Device Icons for the currently supported display devices. Devices which display a yellow flower on their screen (not dark gray) are currently detected as connected and active.



Some desktop board configurations are capable of supporting a 2nd HDMI or a 2nd DVI. If two same-type devices are detected, there will be a separate icon for each in the device icon area.

general icon notes

Click a Display Device icon, or navigate to it using the cursor keys, to select a device for configuration with **S3 ScreenToys Device Management**.

When a device is selected, a blue outline surrounds the icon to identify it as selected. The Device Settings area (located below the icon area) will change and provide context-sensitive options for that device.

Right click on a device icon in the Display Devices area to launch a popup context menu for that device.

Display Status checkbox



Each Display Device Icon has an associated Display Status checkbox which indicates the device's on/off status.

ON (checked) indicates the graphics adapter is outputting a signal to the display device which is detected and active. The display device is fully enabled in this state.

OFF (unchecked) indicates the device is detected but the graphics adapter is not outputting a signal to this device. When in OFF status, the device may remain powered and connected to the system, but S3 Graphics software will



treat the device as inactive.

Check the device's Display Status checkbox to change the device's status to ON. Clear the checkbox to change the device's status to OFF.

You must select **Apply All** to finalize the Status change.

At a minimum at least one device must be on. S3 Graphics software will disallow device combinations that are not compatible with your hardware.

Display device status cannot be adjusted while in Windows Vista/XP Extended desktop mode. (Note: Extended mode can be toggled from either Options dropdown list, select Display Settings, or from the Personalization Display Settings page. Select the secondary display and uncheck Extend desktop to this display. Once in Multiple Monitor Clone mode (SingleView same image), you should now be able to fully configure your displays independently.)

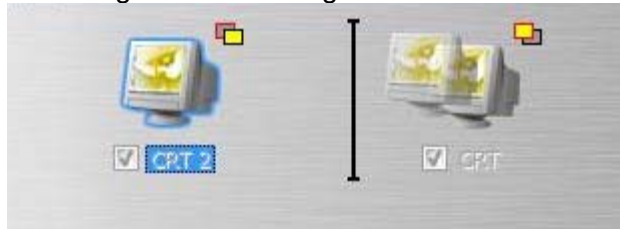
Display device status cannot be adjusted while playing DVD or higher resolution video.

Dragging Devices

Display Device icons can be selected and dragged to a new position.

Drag action

Click on an icon and hold the mouse button down while dragging the image icon to the left or right in the Display Device area. While the drag operation is in progress you may see a faint monitor image and a black vertical line indicating the current target destination for the icon.



Note that this adjustment is for convenience only and is not considered a “change” by the application. You do not have to Apply, the application will automatically remember the icon positions. Moving icons has no effect on the relative position of the displays in screen space.

Device state indicators

Display Device Icons change their appearance to reflect the state of the display device.

Note: In the **Options** dropdown list, un-check **Show Connected Devices only** to see icons for both available and unavailable displays.



Disallowed.

The icon will have a gray screen and will be dimmed and unavailable. A red circle with a diagonal line through it will overlay on upper left corner of the device image and the device text and status checkbox will be dimmed.

The Disallowed Device is usually a connected device which could be supported but cannot be used at this time. For example, the current hardware configuration may not support this device, or the device cannot be enabled in combination with the other currently enabled devices.



Disconnected.

The icon will have a gray screen and will be dimmed and unavailable. A red X will overlay on upper left corner of the device image and the device text and status checkbox will be dimmed.

The Disconnected Device could be supported but is not detected as currently connected to the system.



Connected/ Disabled/ Not Selected.

The icon will display the device with a gray screen. The device text and status checkbox will not be dimmed.

The Connected/Disabled/Not Selected Device is detected as connected to the system but the device is not enabled and is not available for configuration.



Connected/ Disabled/ Selected.

The icon will display the device with a gray screen. The device text and status checkbox will not be dimmed. A blue outline around the device and a blue highlight on the device text name.

The Connected/Disabled/Selected Device is detected as connected to the system, but is not currently enabled. The blue outline indicates it is the device currently selected for configuration in **S3 ScreenToys Device Management**.

Click on another connected device to clear this as the current configuration selection.



Connected/ Enabled/ Not Selected.

The icon will display the device with a yellow flower screen and a check in the device status checkbox.

The Connected/Enabled/Not Selected Device is detected as connected and active. **S3 Device Management** configuration options can not be made for this device at present, since it does not have a blue outline indicating it is selected for configuration. Clear the status checkbox to change the device status to off.



Connected/ Enabled/ Selected.

The icon will display the device with a yellow flower screen, a blue outline and a check in the device status checkbox.

The Connected/Enabled/Selected Device is detected as connected and active. **S3 Device Management** configuration options can made for this device, as indicated by the blue outline indicating it is selected for configuration. To select a device for configuration in the current session, select the device from the Display dropdown list and then click on the icon. The blue outline should appear. Clear the status checkbox to change the device status to off.

Device state indicators (cont.)

Display Device Icons change their appearance to reflect the state of the display device.

Status:



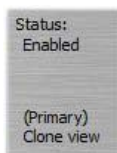
Status:

for selected display

The icon will display the device with a desktop bitmap on the screen and a blue outline around the device. There may also be a blue highlight on the device text name. There is a check in the device status checkbox.

In the example, the status **Enabled/Connected/** indicates that the Device is detected as connected to the system, active and the device is currently selected for configuration in the **Device Management** page.

Status: (multiple monitor)



Status:

for selected display in multiple monitor configuration

For multiple monitor configurations, additional information is provided about the relationship between two display devices. The selected monitor may be either: Primary (i.e., the main monitor) or Secondary. The display on the two monitors will be either:

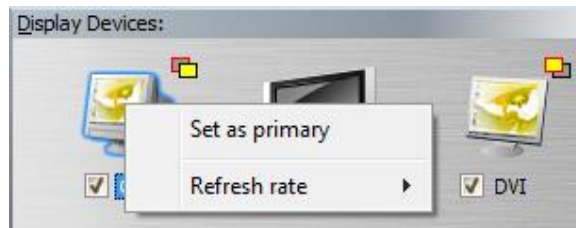
Clone view: both monitors show the same image, or
Extended view: monitors each provide a different part of a large desktop view. In the example, the multiple monitor configuration for the selected device is **(Primary) in a Extended View.**



Primary Secondary Status Indicators

For dual display configurations, rectangle pairs may appear to the upper right of a display icon. The leftmost upper rectangle is outlined in red and gives the status of that display, and the rightmost lower rectangle is outlined in black and reports the status of the other display. If the leftmost upper rectangle is bright yellow and in front of the lower rectangle, then that device is the Primary View. If the leftmost upper rectangle is gray and positioned behind the lower rectangle, then the associated device is the secondary display, which could be either a clone view or part of an extended desktop.

To change the Primary View device, right click on whichever device is currently the secondary display (the icon will have the gray leftmost upper rectangle, or change your Display selection from the Display dropdown list.). A popup context menu will appear.

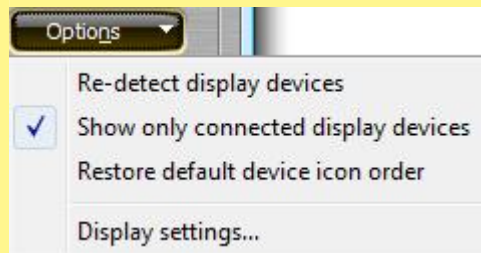


Click to select the option **Set as Primary**. Now the Primary/Secondary indicator icons will change on screen, and the **Apply All** button at the bottom of the window will become available for selection. As with all changes, you must click **Apply All** to complete the change.

7.1.2 Display Options dropdown list

Options dropdown list

The Options dropdown list provides options which allow you to control the re-enumeration of the connected devices and access to controls for basic display settings.



Options include:

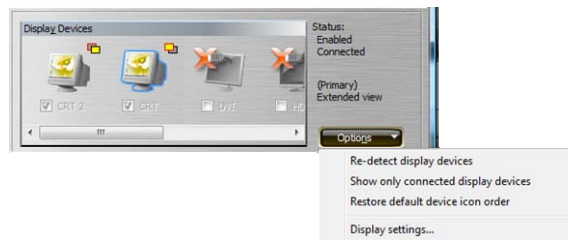
Re-detect display devices

Check this option to force a re-enumeration of your connected devices. This will Re-detect all connected devices, which may be useful to do after you have connected a new device.

Show only connected display devices

When checked (default), only connected devices appear in the Display Devices area.

Uncheck this option to show all possible devices for your configuration, including those devices not connected.



Restore default device icon order

If you have previously dragged your display icons around in the Display Devices area, check this option to restore the order of the devices to their default order.

Display settings...

This page is similar to the Display Settings page provided by the operating system. See [Device Management Display Settings...](#) for details.