VIA Embedded

user manual

VIA eH1

Embedded Graphics Card

Revision 1.0
100-01052011-1730

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Regulatory Compliance

FCC-A Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his personal expense.

Notice 1

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

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

Safety Precautions

Do's

- Always read the safety instructions carefully.
- Keep this User's Manual for future reference.
- All cautions and warnings on the equipment should be noted.
- Keep this equipment away from humidity.
- Always unplug the power cord before inserting any add-on card or module.
- If any of the following situations arises, get the equipment checked by authorized service personnel:
    - Liquid has penetrated into the equipment.
    - The equipment has been exposed to moisture.
    - The equipment has not worked well or you cannot get it work according to User's Manual.
    - The equipment has dropped and damaged.
    - The equipment has obvious sign of breakage.

Don'ts

- Do not leave this equipment in an environment unconditioned or in a storage temperature above 60°C (140°F). The equipment may be damaged.
- Do not leave this equipment in direct sunlight.
- Never pour any liquid into the opening. Liquid can cause damage or electrical shock.
- Do not place anything over the power cord.
- Do not cover the ventilation holes. The openings on the enclosure protect the equipment from overheating

Box Contents

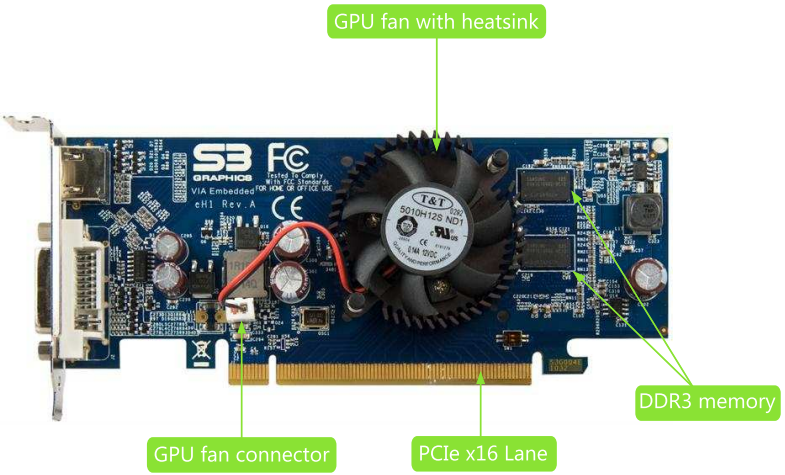
- ☐ 1 x VIA eH1 Graphic Card
- ☐ 1 x Drivers and Utility CD
- ☐ 1 x DVI to CRT adapter

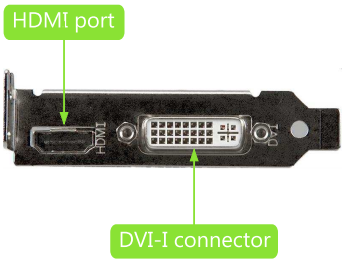
TABLE OF CONTENTS

1

Product Overview

BOARD LAYOUT





SPECIFICATIONS

Board Model	VIA eH1
Bus Interface	PCI Express 2.0 (5.0Gbps) x16
Graphics Processor	Chrome 5400E • Integrated Dual-Link DVI, HDMI with HDCP, and HD-audio
Memory Type	DDR3
Memory Size	512MB
DVI	D-Sub DVI port • CRT supported (requires DVI to CRT adapter)
HDMI	HDMI port (Type A) • DVI supported (requires HDMI to DVI adapter)

KEY FEATURES

- PCI Express 2.0 (5.0Gbps) x16 with Fractional x1, x4 and x8 Lane Width Support (can be set through strapping resistors)
- HDMI and DVI Hot Plug
- Power Management Optimizations
- Unified Vertex, Geometry and Pixel Shaders with dynamic load balancing
- 32bit driver support for Windows XP
- 32bit / 64bit driver support for Windows 7 (WDDM1.1) and Linux x86
- DirectX 10.1 Shader Model 4.1, OpenGL 3.1
- H.264 and VC-1 support for Blu-Ray (including BD2.0 / BD Live)
- Supports multiple H.264 stream decode
- Dual-Link DVI resolution up to 2560 x 1600
- Max CRT resolution 2048 x 1536 @ 75Hz
- Max HD 1920 x 1080p
- Native HDMI transmitter with integrated HD-Audio support
- Integrated HDCP keys
- Single-Display Options:
  HDMI, Dual-Link DVI, CRT requires DVI-CRT adapter
- Two-Display Examples:
  HDMI+Dual-Link DVI, HDMI+HDMI via DVI-HDMI cable (audio available under Windows 7), DVI+DVI via HDMI-DVI cable-(no audio)

Note:
VIA eH1 does not support Blu-ray playback for Windows XP.

System Requirements

The VIA eH1 graphics card requires the following minimum system and software requirements:

- PCI Express 2.0 compliant motherboard
- 1GB system memory
- Operating System: Windows XP, Windows 7 and Linux
- CD-ROM or DVD-ROM (for software installation)

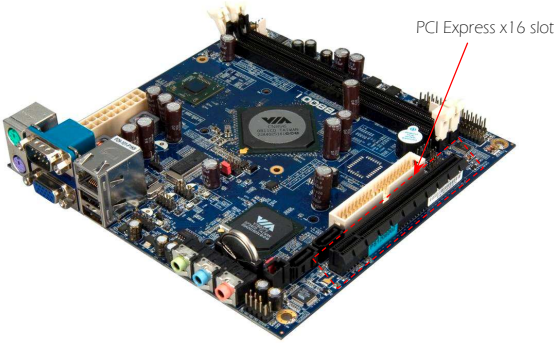
2

Hardware Installation

GRAPHICS CARD INSTALLATION

Step 1
Turn off the system power and remove the computer cover. (Refer to the casing manual for more details on how to remove the computer cover).

Step 2
Locate the PCI Express expansion slot on the board. The PCI Express slot usually colored with black or dark brown.



Step 3
Remove the graphics card cover plate at the back of the case.

Step 4
Align the graphics card above the PCI Express slot. Then gently push down the card evenly and firmly

Step 5
Secure the graphics card to the casing and connect all the necessary cables.

Step 6
Replace the computer cover.

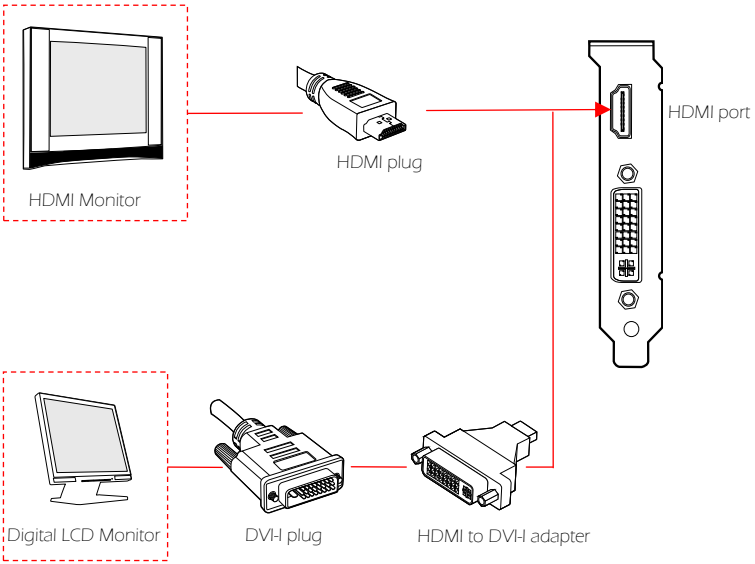
Step 7
Attach the display cable of the monitor to the appropriate connector.

CONNECTING MONITOR DISPLAY PLUG

To enable the video display capabilities of VIA eH1 graphics card, the monitor display cable must be attached correctly to the video connectors on the graphics card.

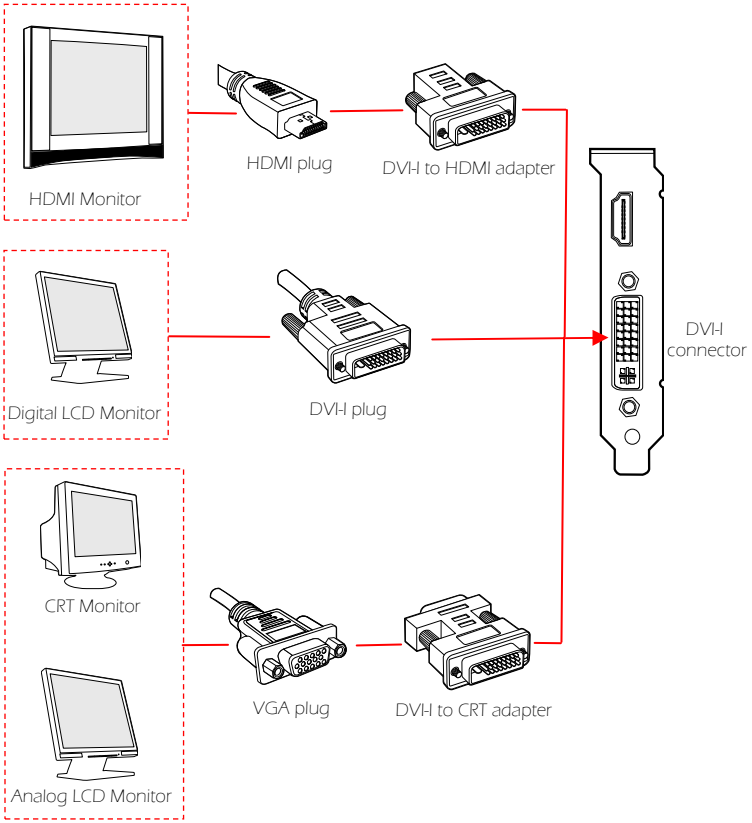
Refer to the following pictures below of the display cable and their corresponding connectors.

HDMI Port



Note:
When the HDMI to DVI-I adapter is used to attach a DVI display monitor through the HDMI port on the graphics board, the resulting output will be DVI. However, the S3 HD Audio will not be available.

DVI-I Connector

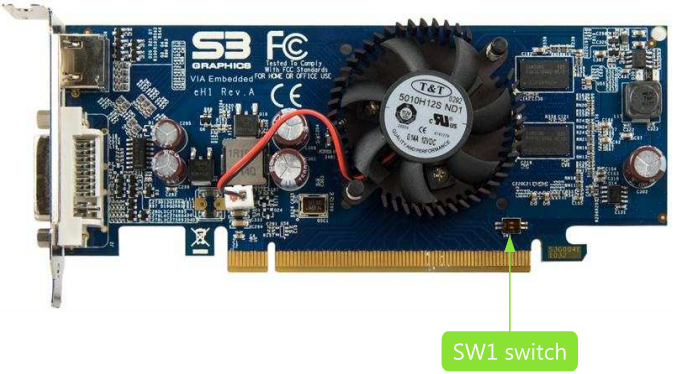


Note:

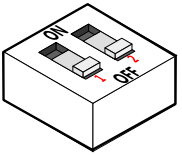
1. When the DVI-I to HDMI adapter is used to attach the HDMI display monitor through the DVI-I connector, the resulting output will be HDMI. The S3 HD Audio will be available for configuration under Windows 7 or Windows XP.
2. Windows 7 provides the HD Audio software driver to activate S3 HD Audio.
3. If using Windows XP, Service Pack 3 is required to be able to use the S3 HD Audio. Also the S3 HD Audio needs to be set as the default audio device from the Control Panel.

ONBOARD SWITCH (SW1) SELECTABLE

The VIA eH1 graphics card has an onboard switch (SW1). The switch (SW1) was designed for the embedded motherboards that do not support PCIe generation 2.0 and do not have automatic conversion from PCIe generation 2.0 to generation 1.0 setting. Thus, the switch (SW1) is required to be set manually to "ON" (1 and 2) for the motherboard to identify the PCIe generation 1.0. The default setting is "OFF" (1 and 2).



Setting	1	2
PCIe Generation 2.0 (default)	OFF	OFF
PCIe Generation 1.0	ON	ON



3

Software Installation

DRIVER INSTALLATION

The VIA eH1 Graphics Card includes a package driver CD that contains the set of display drivers and utilities for enhancing the resolution and performance of the graphics card.
The drivers can also be downloaded from http://www.s3graphics.com.

For Windows XP

When Windows XP launches, its automatically detect the new hardware after the installation of the graphics card. The "Found New Hardware Wizard" window will appear.

Step 1

Insert the driver CD into the CD-ROM or DVD-ROM drive. The driver CD should run automatically after closing the CD-ROM or DVD-ROM drive. The driver utilities and software menu screen should then appear on the screen.

Note:
If the CD does not run automatically, click on the "Start" button, select "Run", and browse "D:\S3G_CHROME5x_7_xxxxxx.exe" (assuming "D:\" is the CD/DVD drive)

Step 2

Follow the step-by-step installation instructions as they appear on the screen.

Step 3

Click the **"I accept"** button when asked to accept the S3 Graphics license agreement. Then click **"Next"** to continue.

Step 4

In Windows Security dialog box, click **"Install"**.

The installation process may take a few minutes.

However, if an error windows appear showing "Windows can't verify the publisher of this software", just click the **"Continue anyway"** or **"Install this driver software anyway"** to continue the installation.

Note:
The screen might go blank for a few seconds during the installation process but this is normal.

Step 5
When the "Found New Hardware Wizard" window appears, click the **"Finish"** button to complete the installation.

For Windows 7

Because the Chrome 5400E GPU of VIA eH1 Graphics Card is newer than the Windows 7 release date, the Windows 7 operating system will not be able to recognize the Chrome 5400E GPU. Therefore, installing the Microsoft-provided driver for the generic low resolution is necessary.

Step 1

Turn on the computer.

Step 2

Initially, follow the steps on the on-screen prompt to install the Microsoft-provided driver for generic low resolution.

Step 3

As instructed, restart the computer after the installation.

Step 4

Insert the driver CD into the CD-ROM or DVD-ROM drive. The driver CD should run automatically after closing the CD-ROM or DVD-ROM drive. The driver utilities and software menu screen should then appear on the screen.

Note:
If the CD does not run automatically, click on the "Start" button, select "Run", and browse "D:\S3G_CHROME5x_7_xxxxxx.exe" (assuming "D:\" is the CD/DVD drive)

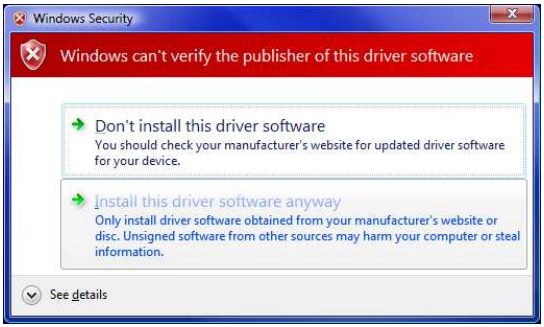
Step 5
Follow the step-by-step installation guide appear on the screen.

Step 6
Click the **"I accept"** button when asked to accept the S3 Graphics license agreement. Then click **"Next"** to continue.

Step 7
In Windows Security dialog, click **"Install"**.

The installation process may take a few minutes.

However, if an error window appears showing "Windows can't verify the publisher of this software", just click the **"Continue anyway"** or **"Install this driver software anyway"** to continue the installation.



Note:
The screen might go blank for a few seconds during the installation process but this is normal.

Step 8

When the "Found New Hardware Wizard" window appears, click the **"Finish"** button to complete the installation.

4

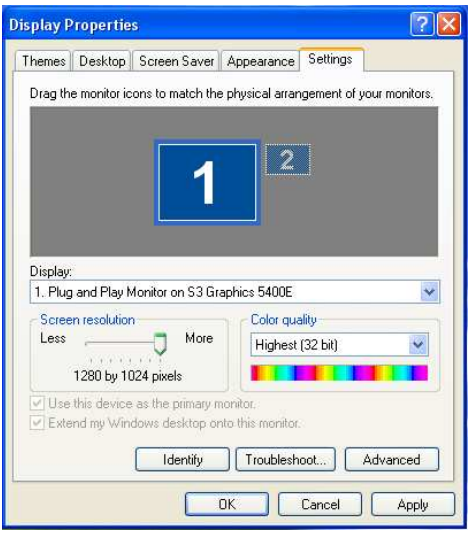
Basic Display Settings

DISPLAY SETTINGS

The Display Settings gives you the ability to customize or personalize the graphics resolution and color quality. The Display Setting is accessible through basic controls provided by the Windows operating system or from S3 Graphics ScreenToys links.

Access Display Settings

From Control Panel



Setting Resolution and Color Quality

For Windows 7

Step 1
Right-click on **"Desktop"** screen.

Step 2
Select the **"Personalize"**.

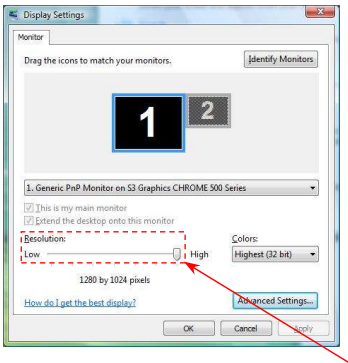
Step 3
In the Display Settings click the **Monitor"** tab.

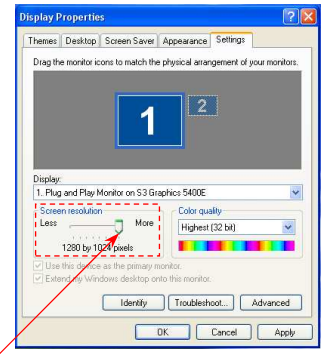
For Windows XP

Step 1
Right-click on **"Desktop"** screen.

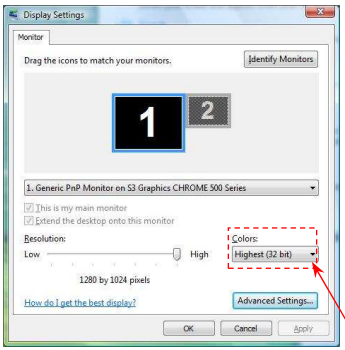
Step 2
Select the "**Properties"**.

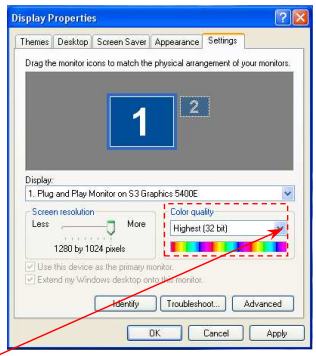
Step 3
In Display Properties, click the "**Settings"** tab.





Slide the **"Resolution slide bar"** to select the desire resolution.





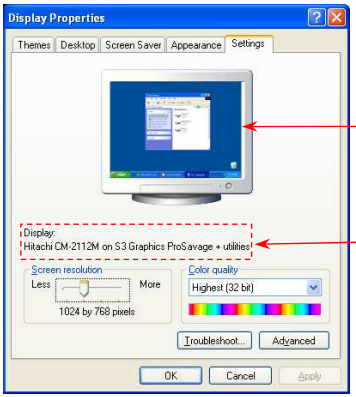
Click the arrow down to select the desire color depth/quality.

General Display Settings

This setting is use to identify and adjust the relationships between monitors when there are multiple displays.

Display Monitor Icon

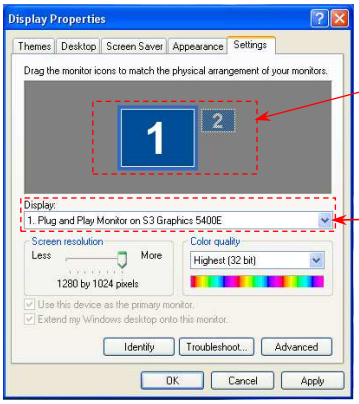
Example 1: Configuration with one display monitor device supported.



Shows only one monitor icon available.

"Display selection type" options are not available.

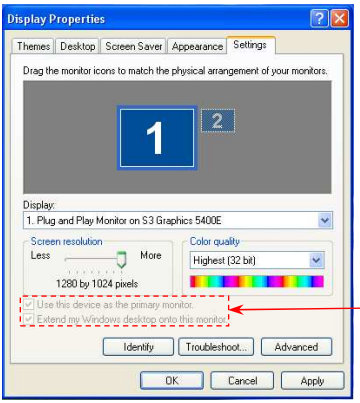
Example 2: Configuration with two display monitors supported.



Show two monitors icon available. The rectangle with number 1 represents the Primary Monitor and corresponds to the number 1 in Display selection type below.

"Display selection type" options available.

Note:
The "Display Settings" dialog boxes above are examples from Windows XP.



Enable/Disable "Use this device as the primary monitor" and "Extend my Windows desktop onto the monitor".

Note:

1. The "Display Settings" dialog box above is an example from Windows XP.
2. In the configuration that can supports two displays devices but no second display had detected. The rectangle with number 2 (monitor icon) will be color grayed out.

Drag Display Monitor Icon

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

Step 1

Position the cursor over the monitor icon.

Step 2

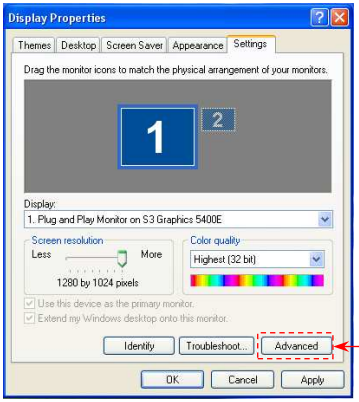
Click the left mouse button and hold the button.

Step 3

Drag the icon to a position that reflects the relative position of your display devices.

Advanced Settings

This setting is use to access the operating system control for display including the General (available only in Windows XP), Adapter, Monitor, Troubleshoot, Color Management and S3 ScreenToys.



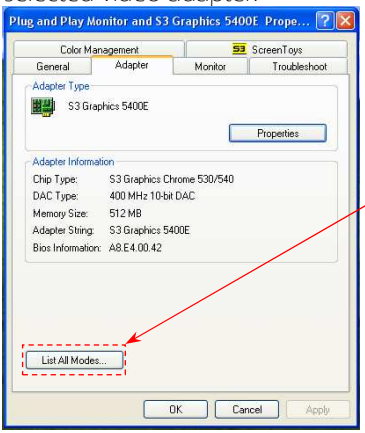
Click the "Advanced" to open the advanced settings.

Note:
The "Display Properties" dialog box above is an only example from Windows XP.

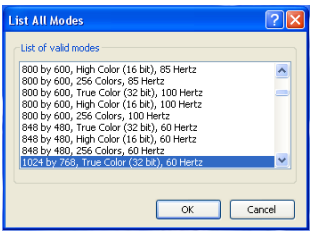
Adapter Tab

Provides access to the general information of the Display Adapter and provides the "List All Modes" button to change graphics resolution, color quality and refresh rate simultaneously.

The "List All Modes" is a list of all combinations of screen resolutions, color and refreshes rates that are available on the selected video adapter.



Click the "List All Modes" to show modes options



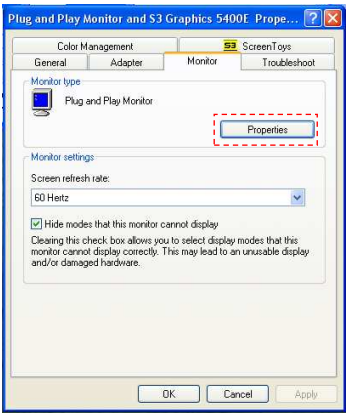
Monitor Tab

Monitor Type Definition

The operating system automatically detects the monitors or other display devices. If the operating system (Windows) has identified the monitor as a PNP VESA DDC or an UNKNOWN monitor type, then, you will not be able to access the full capabilities of your monitor. Change the monitor definition to a definition that is compatible with your monitor model.

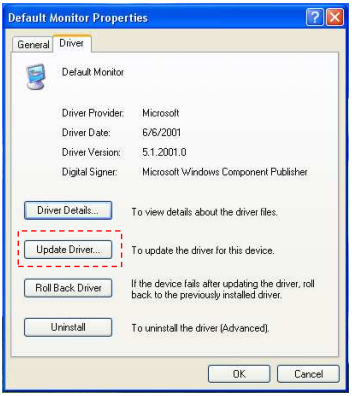
Step 1

In Monitor tab, click the "**Properties**" button.



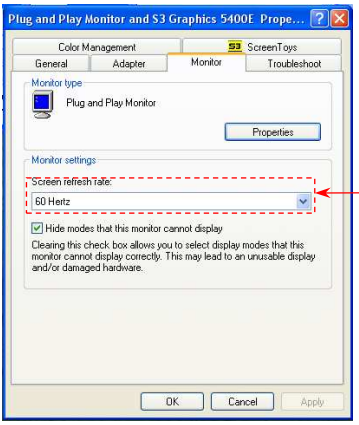
Step 2

In Driver tab, click the **"Updated Driver"** button. This launches the Windows Hardware Update Wizard. Follow the Windows Wizard directions to update your monitor software.



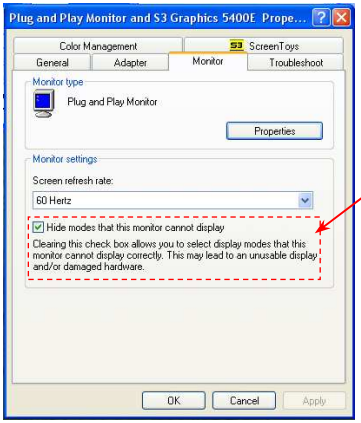
Refresh Rate Adjustment

Adjust the monitor's refresh rate to provide an optimized display with minimal screen flicker.



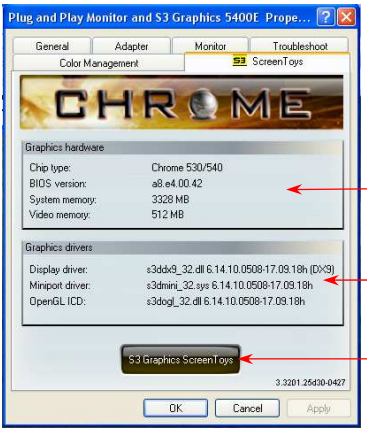
Click the item to select the Screen refresh rate.

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 display output devices and display adapters are available for the selection.



S3 ScreenToys Tab

Provide the VIA eH1 graphics card hardware information, graphics drivers and access button to launch the S3 Graphics ScreenToys dialog windows.



Shows the information of S3 chip type, video memory size and BIOS versions

Shows the S3 displays drivers and OpenGL ICD version

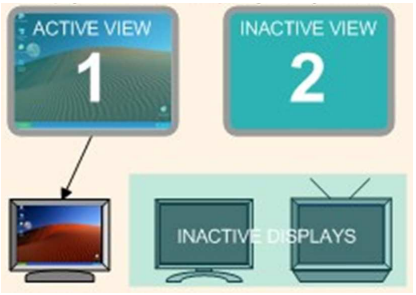
Click to launch the "S3 ScreenToys dialogue page

USING MULTIPLE MONITORS

Windows 7 and Windows XP support the use of a single graphics adapter to drive a multiple monitor configuration.

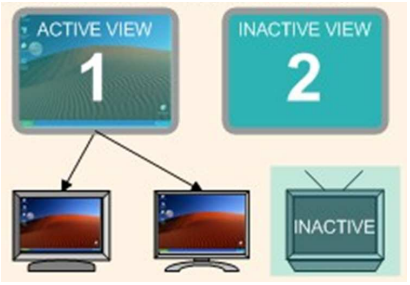
Single View Mode

When the Windows operating system is set in "SingleView", regardless of the number of monitors in use, only a single view of desktop image will be displayed. This single view of the desktop is sometimes referred to as the Primary View.



Single Active Display is associated with the primary and only active view

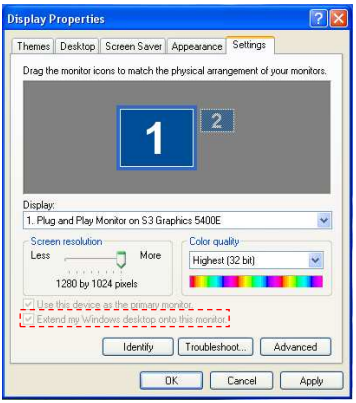
There maybe one (Primary Monitor/Main Monitor) or more display output devices (Multiple Monitors) associated with this single Primary View. These monitors are said to be "Child devices" and provide a duplicate or clone view of the Primary View.



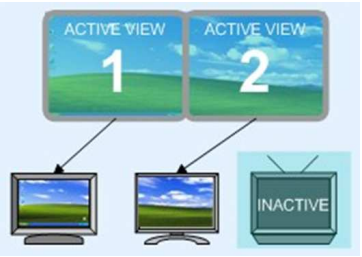
All Active Displays are children of primary view with same image

Dual View Mode

Select the" Extend the Windows desktop onto this monitor" to enabled the DualView mode. The Windows desktop image is divided into two parts/views: the Primary View and the Secondary View.



The Display Settings window shows which output devices are associated with each desktop view. Windows "This is my main monitor" (in XP: "Use this device as the primary monitor") option allows you to specify which device you want to display the Primary View.



Active Displays in DualView – Different images and independent timings

Note:
For dual-display, the display quality might vary according to the bit rate, video compression format and whole system configuration.

Enabling Multiple Monitor Clone Display

The Multiple Monitor Clone Display is to extend the desktop display onto the secondary monitor. The secondary monitor will show the duplicate image of the primary screen.

Steps on how to enable Multiple Monitor Clone Display:

Step 1

Open the "S3 ScreenToys" dialogue page.

Step 2

In the Basic menu, select "Device Management".

Step 3

In the Display Devices area, click the **"checkbox"** below the display devices you wanted to be the Child or Clone copy of the current display.

In this example: the second CRT2 device is added as a Clone child of the primary CRT display device.

Step 4

Click the "**Apply All**" button and click **OK** to confirm.

Step 5

Once the clone display is enabled, the Display Devices will report the following status:

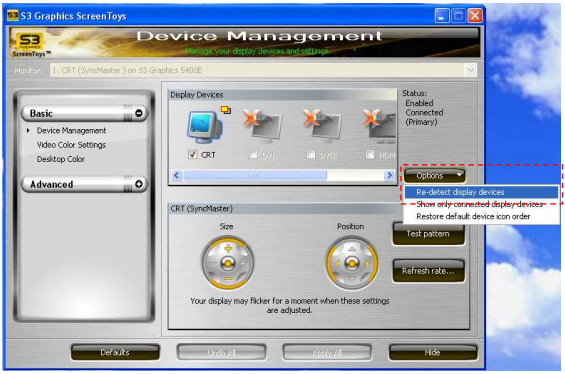
Note:
To return to a single display device, uncheck the box below the clone device and click the "Apply All" button.

Display Device Attachment and Detection

To configure through S3 Graphics ScreenToys "Device Management", the device must be detected as enable or connected. The devices can be added or removed in a hot-plug/unplug manner.

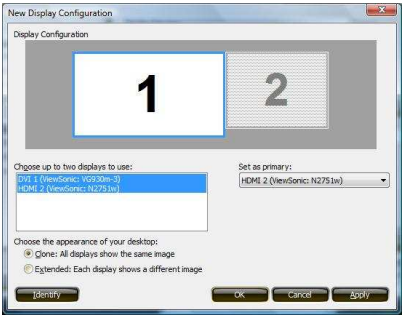
Force re-enumeration

The re-enumeration of display can be done by checking the Re-detect display devices under the "Options" button on the S3 Graphics ScreenToys.



New Display Device Configuration

If the display device is removed or attached while the system is active, the S3 Graphics software will attempt to restore the 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.



Display Device Configuration

Windows XP has a less robust detection scheme than Windows 7. If the re-enumeration fails, but you want to attach a new or second display output device to a Windows XP system, use of the following procedure is recommended.

Step 1

Turn off the system.

Step 2

Attach the new or second display device to the VIA eH1 graphics card.

Step 3

Reconnect the cables and power on the new display device.

Step 4

Reboot the system.

Step 5

Install the display/monitor drivers if necessary.

5

Basic S3 Graphics ScreenToys

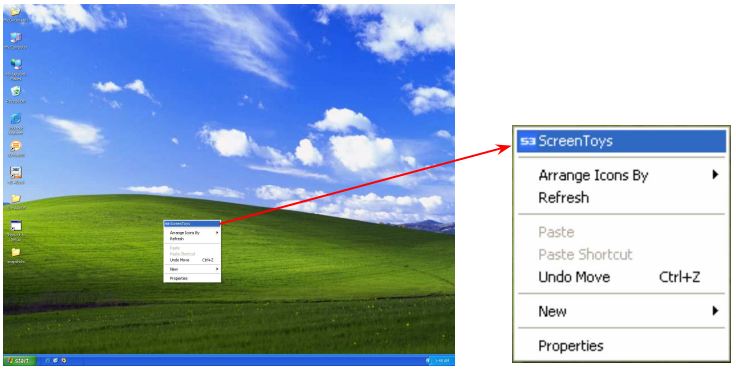
This section describes the basic access, typical page layout and common control for the S3 Graphics ScreenToys window pages.

OPENING THE S3 GRAPHICS SCREENTOYS

There are many options on how to access the S3 Graphics ScreenToys window pages.

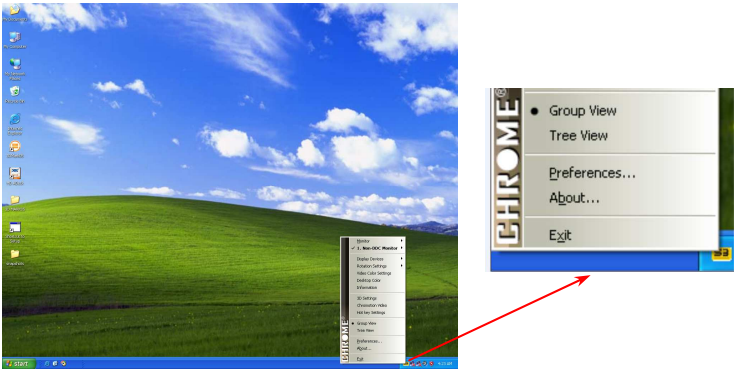
Option 1

Right-click on "Desktop" and select the "S3 ScreenToys" menu.



Option 2

Right-click on the "S3 taskbar icon" to show the S3 CHROME menu.



Option 3

For Windows 7

Step 1
Click the "Start" button.

Step 2
Select the "Control Panel".

Step 3
Select the "Appearance and Personalization" category.

Step 4
Click the "Display Settings" icon.

Step 5
Click the "Advanced Settings".

Step 6
Click the S3 ScreenToys tab.

Step 7
Click the "S3 ScreenToys" button.

For Windows XP

Step 1
Click the "Start" button

Step 2
Select the "Control Panel".

Step 3
Select the "Appearance and Themes" category.

Step 4
Click the "Display" icon.

Step 5
Select the "Settings" tab.

Step 6
Click the "Advanced" button.

Step 7
Click the "S3 ScreenToys" tab

S3 GRAPHICS SCREENTOYS WINDOW

Monitor List

Click the Monitors item to select monitor configuration.

Note:
If you have only one monitor connected in the system or have two monitors in clone mode, the monitor option list will be unavailable for the selection.

Command Buttons

Undo All and Apply All

Click the **"Undo All"** button to cancel all changes made. And the settings will return to the values last saved or last applied.

Click the **"Apply All"** button to apply all changes made.

Exit, Defaults and X buttons

Click **"x"** button to close the S3 Graphics ScreenToys windows.

Click the **"Hide"** button to minimize /hide the S3 Graphics ScreenToys window.

Click the **"Defaults"** button to return the status value of the current page.

Basic and Advanced Menus

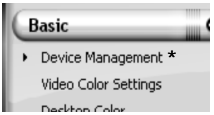
The left panel menus contains selection items for Basic and Advanced utility menus.

Click the **"+"** and **"–"** sign button to expand and hide the Basic and Advanced utilities menus.

Group View Setting (default)

Tree View Setting (optional)

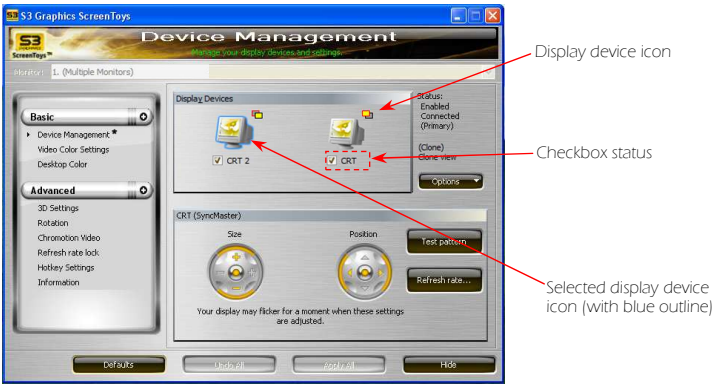
An asterisk " * " is appended if changes have been made to any utility menu. Clicking the "Apply All" or "Undo All" button, the asterisk will disappear.



BASIC UTILITIES MENU ITEMS

Device Management Display Controls

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



- Each display device icon has an associated display status checkbox which indicates if the device is on or off.
- Click on the checkbox underneath of the device icon to configure it.
- Click on the device icon to show options for configuration of that device.
- When a device is selected, the blue outline surrounds the device icon identifies it as selected.
- Right-click on the device icon to launch a pop-up context menu for that device.
- The display device icon can be selected and dragged to a new position. Click the icon and hold the button while dragging the icon to the left or right in the Display Devices area.
- The display device icons change their appearance to reflect the state of the display device.
- To apply all the changes, click the "Apply All" button.

Click the **"Option"** button to show the access option to control the basic display settings.

Re-detect display devices

- To re-detect all the connected devices.

Show only connected display devices (default option)

- To show the connected devices in the Display Devices area.

Restore default device icon order

- To restore the arrangement order of the devices icon to their default order.

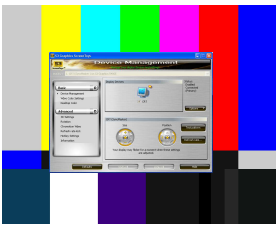
Fine Tuning CRT

This section provides the details on how to configure the active and detected CRT display device.

Click the **"+"** and **"-"** sign button to increase or decrease the horizontal and vertical size of the display image. And click the **"middle"** button to reset to the default values.

Click the **"arrow"** button to move and adjust the image display position. And click the **"middle"** button to reset to the default value.

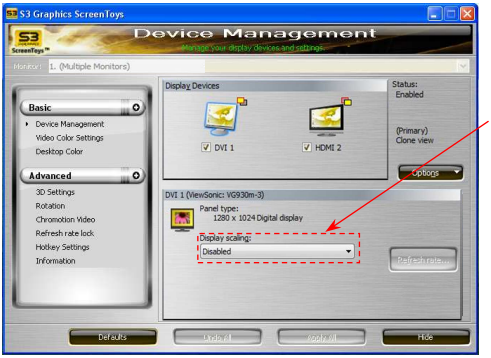
Click the **"Test pattern"** button to cycle through various test patterns to calibrate and adjust CRT image.



Click the **"Refresh rate..."** button to select a refresh rates for the current display.

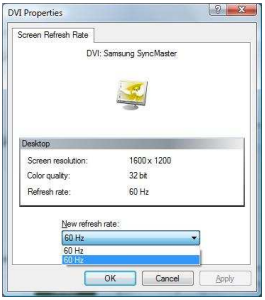
Fine Tuning DVI

This section provides the details on how to configure the active and detected DVI display device.



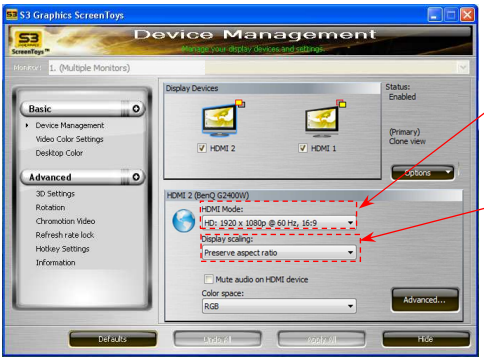
"Display scaling" allows you to set an optimized mode for your DVI output.

Click "Refresh rate..." button to select the refresh rate for the current display.



Fine Tuning HDMI

This section provides the details on how to configure the active and detected HDMI display device.

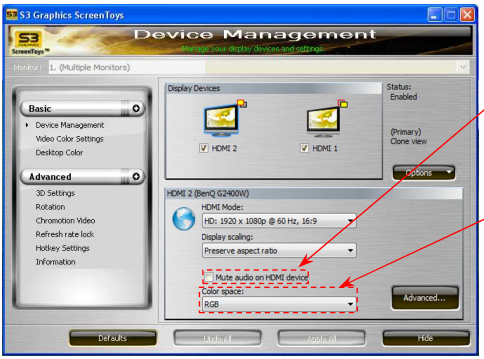


"HDMI Mode" allow you to select HDMI formats.

"Display scaling:" allow you to set an optimized mode for your HDMI output.

Auto Mode checkbox (for Window XP only)

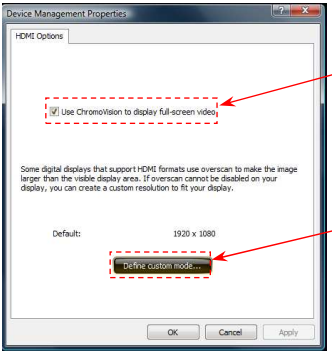
- Allows you to let the S3 Graphics ScreenToys software automatically determine which HDMI Type is optimized for your configuration.



Select to mute the audio portion of the HD audio-video stream.

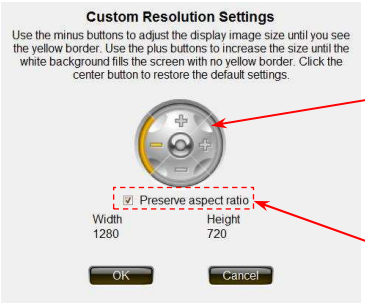
"Color space" allow you to select between the three formats for the HDMI output.

Click the **"Advanced"** button to open the **HDMI Options** page



ChromoVision allows full screen playback on your HDMI device while windowed video plays on another display device associated with the Primary view.

Click the **"Define custom mode.."** to open dialog box which allow to customize HDMI display size.



Click the **"+"** and **"-"** sign button to adjust the display image size. And click the **"middle round"** button to reset to the default values.

Checked the box to fixed and ensure the HDMI image maintains its original aspect ratio.

S3 HD Audio Fine Tuning

Microsoft Windows 7 includes an HD Audio software driver. After the installation of the S3 video driver, the S3 HD Audio will be available for selection as the default audio device.

To select S3 HD Audio device:

For Windows 7

Step 1
Click the **"Start"** button.

Step 2
Select the **"Control Panel".**

Step 3
Select the **"Hardware and Sound"** category.

Step 4
Select the "**Sound"** and on the **Playback tab** have the available sound devices.

Step 5
Select the desired HD Audio device and set as Default device.

For Windows XP

Step 1
Click the **"Start"** button.

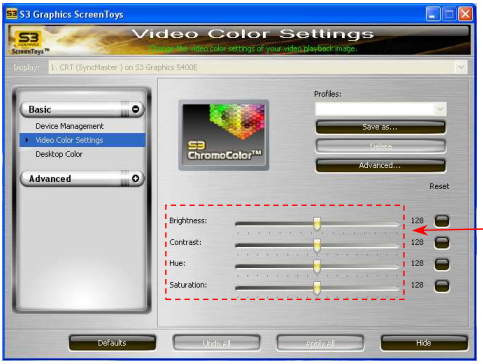
Step 2
Select the **"Control Panel".**

Step 3
Select the "**Sound"** and on the **Playback tab** have the available sound devices.

Step 4
Select the desired HD Audio device and set as Default device.

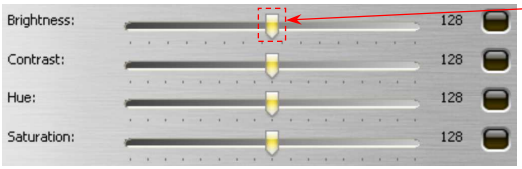
Video Color Settings Control

The Video color settings are used to adjust the brightness, contrast, hue, saturation, black-point enhancement and white-point enhancement.



"Slider bar" is for adjusting the display color settings

Slide Bar

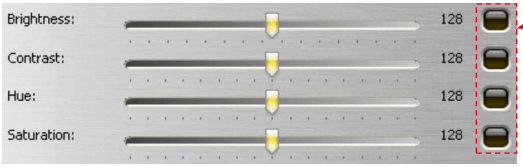


Click and drag the **"Slide bar"** to adjust the color settings value.

Move the slide bar to the right to increase and move to the left to decrease the value of being adjusted.

Note:
Slide bar can be adjusted using the keyboard "Right/Up" button's arrow to increase and "Left/Down" button's arrow to decrease the value.

Reset Buttons



Click the **"Reset"** button to adjust to default value.

Desktop Color Settings

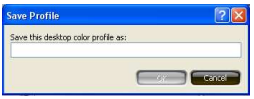
The Desktop color setting is used to adjust the gamma, brightness, and contrast of the GPU's output signal to compensate for differences between different DVI, CRT, HDMI and other display output devices. Different display output devices will display the same output at different intensities, or different levels of brightness, contrast and color.

Contain the configurable connected display devices.

Reports which display is the current configurable device, by device type.

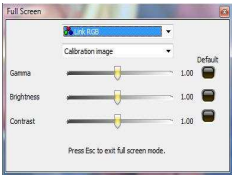
Menu lists of all Desktop Color Profiles available for selection.

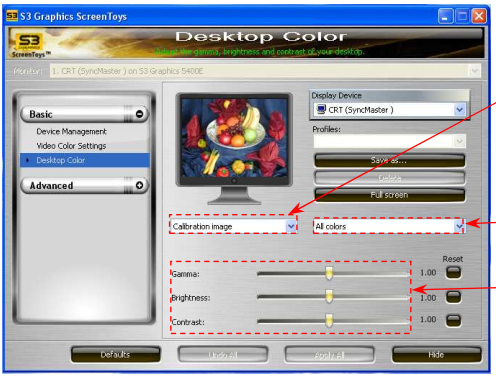
To save the current setting using the existing or new Profile name.



Delete the current selected Desktop Color Profile.

Click the **"Full screen"** button to show the current calibration picture in full-screen.



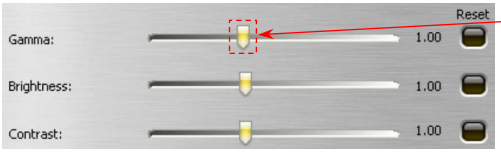


To display the menu lists of calibration pictures available, and to display in the calibration monitor image.

Lists of color channel to adjust.

"Slider bar" is for adjusting the gamma, brightness, and contrast.

Slide Bar



Click and drag the **"Slide bar"** to adjust the gamma, brightness and contrast value.

Move the slide bar to right to increase and move to the left to decrease the value of being adjusted.

Note:
Slide bar can be adjusted using the keyboard "Right/Up" button's arrow to increase and "Left/Down" button's arrow to decrease the value.

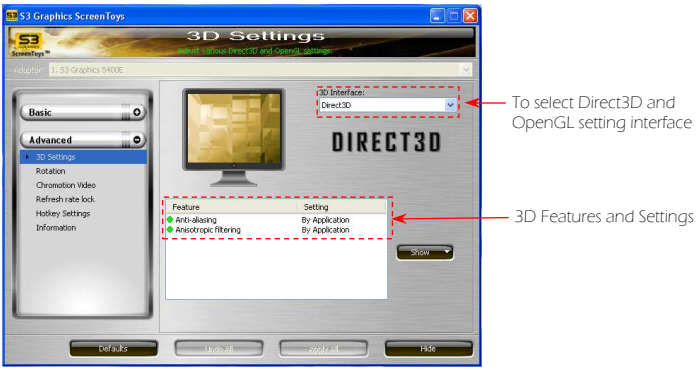
Reset Buttons

Click the **"Reset"** button to adjust to default value.

ADVANCED UTILITIES MENU ITEMS

3D Settings

This section is used to configure or toggle 3D-related capabilities to compensate for differences in the requirements and behaviors of various Direct3D and OpenGL applications.



Features and Settings

You can customize 3D features both globally and by application using the Feature and Setting portion of the S3 Graphics ScreenToys 3D Settings page.

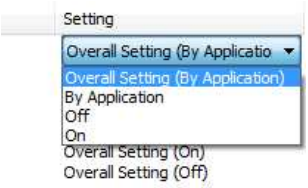
Customize Features and Settings List

Step 1

Click the selected feature on the list, and then the blue highlight will appear on the row indicating that this feature is available for customization.

Step 2

Move the cursor to the Setting column, and right-click to show the values available to customize the selected feature.



Step 3

Click "**Apply All**" button to activate the selected value.

Features Descriptions

The Features list contains options available for adjustment. Most features can be applied for both "Direct3D" and "OpenGL 3D" applications.

Vertical Sync Control (Wait or Vertical Sync)

Controls whether or not the buffer swaps and other activities should be synchronized to the display's Vertical Synchronization or Vertical Retrace Signal, and blanking period during the display blanks retraces its way from the bottom right to the upper left corner of the screen.

Setting options:

- By Application *(default)*
  Allow the Vertical Sync Control setting to change on application requests.
- ON
  Reduce "tearing" artifacts. Synchronizing with the vertical retrace constrains the frame rate thus does not exceed the refresh rate.
- OFF
  Allow buffer swaps to be processed without waiting for vertical synchronization.

Multi-Core CPU Optimization

VIA eH1graphics drivers include optimizations which allow applications to more fully utilize the processing power available with the systems. These optimizations are often useful when running newer applications which can take advantage of thread scheduling prioritization

Setting options:

- Auto *(default)*
  Allow the driver to decide when to do the optimization for Multi-Core CPUs.
- ON
  To use the graphics driver's multi-Core CPU threading optimizations.
- OFF
  Avoid possible compatibility problems when running older applications.

Anti-alias Mode

Anti-aliasing is a technique to reduce the jagged edges ("jaggies") of polygons and lines. The pixels on either side of edges are sampled and then rendered as a blend of the adjoining colors to smooth the appearance of the edge.

Setting options:

- By Application *(default)*
  Allow the application to specify which level of super-sampling should be applied.
- OFF
  Disable anti-aliasing.
- 2X, 4X, 8X
  Enable optimized super-sampled anti-aliasing.

Anisotropic Ratio

The anisotropic ratio is an interpolating and filtering technique of multiple samples from one or more maps to accomplished sharper image.

Setting options:

- By Application *(default)*
  Allow the VIA eH1 graphics card software to use the anisotropic filtering level requested by the application.
- OFF
  Disable anisotropic filtering.
- 2X
  Enable anisotropic filtering at its lowest level.
- 3X, 4X
  Enable anisotropic filtering at its intermediate level to match the preferred balance between quality and performance.
- 16X
  Enable classic anisotropic filtering using 128 taps in a non-square sampling pattern to produce a very high quality visual output, with a decrease in rendering speed.

Feature Description (for OpenGL only)

The following features applied only to OpenGL applications. This setting value will be ignored for Direct3D applications.

OpenGL Conformant Texture Clamp

Allows you to select between two methods which determine the way texture border color is sampled.

Setting options:

- OFF *(default)*
  Turn off OpenGL Conformant Text Clamp.
- ON
  Use OpenGL Conformant Text Clamp method for GL_CLAMP. This method causes texture border color to be sampled.

OpenGL Error Reports

Provides a mechanism to turn off error reporting for applications.

Setting options:

- OFF
  Turn off error reporting.
- ON *(default)*
  Enable error reporting.

OpenGL Limit Extensions

Allows the limiting of extension reporting as an aid in improving compatibility with older applications.

Setting options:

- OFF *(default)*
  Driver does not limit the number of extensions.
- ON
  To have the driver trim the number of extensions reported.

Rotation

This section use to rotate the image/screen on your display panel.

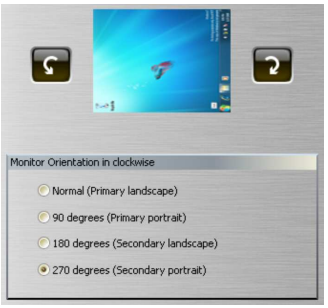
Orientation Options

Normal (Primary landscape)

90 degrees (Primary portrait)

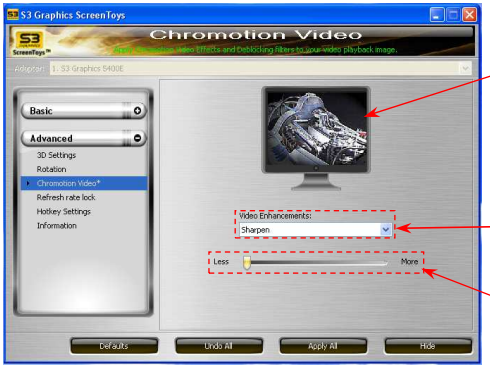
180 degrees (Secondary landscape)

270 degrees (Secondary portrait)



Chromotion Video

This setting allows you to apply the real time Chromotion Video Effects or Chromotion Video Deblocking to video images playing on your display.



Graphics preview image

Click to select Video Enhancements (effect/filter) Options.

Drag the Slide bar to adjust the amount of intensity of the effect/filter.

Video Enhancement (Effect/Filter) Option

Disable All

This removes any Deblocking filters or Artistic License effects.

Embross

Makes the image resemble an engraved stone relief image and make the image displayed in color gray but retain the original edge color.

Neon Edges

Produces high-contrast image similar in effect to that of solarization in a photographic print.

Soft Focus

Produces output image where sharp edges are removed to blur the image and produce a hazy effect.

Sharpen

Makes the output object edges appear crisper.

Complex Picture Smoothing

Uses offset deblocking which affect both block interior and boundaries.

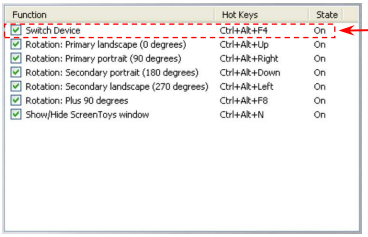
Hot Key Settings

This section displays the S3 Hot key dialog windows that provide the control and customization of the display-related hotkeys.

Assigning the New Hot keys

Step 1

Double-click the hotkey row in the dialog window.



Step 2

Input the new preferred hot key sequence and fill in the text box.

Note:
It must use at least one control key (Ctrl, Shift and/or Alt) followed by another key.

Step 3

Click "Ok" to apply the changes.

Information

This section provides the detailed information about the VIA eH1 Graphics card and associated software such as system configuration, BIOS version, displays drivers information and etc..

A

Appendix

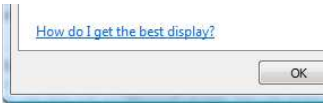
TROUBLESHOOTING GUIDELINES

- Double check the graphics card is properly seated in PCI Express x16 slot.
- Make sure all display cables are properly connected to the graphics card display port/connectors.
- Ensure that the displays cables are plugged-in and receiving power.
- Use standard cables and DDC compatible display devices which are capable of transmitting information to the graphics card.
- When using the graphics card, make sure you disabled the built-in graphics function on the motherboard.
- Make sure the graphics drivers installed is for the appropriate card or display devices.

USE VIDEO DISPLAY HELP

For Windows 7:

The **How do I get the best display?** hyperlink on the Windows 7 Display Settings page provides a link to **Windows Help and Support** information provided by Microsoft.



For Windows XP:

Step 1
Right-click on **"Desktop"** screen

Step 2
Select the **"Properties"**

Step 3
In the Display Properties window, click the **"Troubleshoot"** to launch the "Help and Support Center" window for the "Video Display Troubleshooter".

WINDOWS DRIVER ROLL BACK FEATURE

If problems are encountered after updating your drivers under Windows 7 or XP, you may use the **Driver Roll Back** feature to reinstall the previous "good" driver and restore any driver settings that were changed when the new driver was added.

For Windows 7

Step 1
Click the **"Start"** button.

Step 2
Select the **"Control Panel".**

Step 3
Select the **"System and Maintenance"** category.

Step 4
Click the **"System"** icon.

Step 5
In the left Tasks list, select the **"Device Manager".**

Step 6
Click the plus sign of **"Display adapters".**

Step 7
Double-click **"Graphics CHROME 5400E".**

Step 8
Click the **"Driver"** tab.

Step 9
Click the **"Roll Back Driver"** button.

Step 10
Click the **"Yes"** to confirm that you would to roll back to previous driver.

For Windows XP

Step 1
Click the **"Start"** menu button.

Step 2
Select the "**Control Panel".**

Step 3
Select the **"Performance and Maintenance"** category.

Step 4
Click the **"System"** icon.

Step 5
In System Properties window, click the **"Hardware"** tab.

Step 6
Click the **"Device Manager"** button.

Step 7
Click the plus sign of **"Display adapters"**

Step 8
Double-click **"Graphics CHROME 5400E".**

Step 9
Click the **"Driver"** tab.

Step 10
Click the **"Roll Back Driver"** button.

Step 11
Click the **"Yes"** to confirm that you would to roll back to previous driver.