



**ASUS**®

# Graphics Card

Software Reference



E3325

Second Edition

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## Notices

### Federal Communications Commission Statement

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

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

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

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



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

### Canadian Department of Communication Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

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



## Safety information

### Electrical safety

- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

### Operation safety

- Before installing devices on your motherboard, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

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## About this guide

### Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.



**WARNING:** Information to prevent injury to yourself when trying to complete a task.



**CAUTION:** Information to prevent damage to the components when trying to complete a task.



**IMPORTANT:** Information that you **MUST** follow to complete a task.



**NOTE:** Tips and additional information to aid in completing a task.

### Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS Websites**

The ASUS websites worldwide provide updated information on ASUS hardware and software products. The ASUS websites are listed in the ASUS Contact Information on the inside front cover of this installation guide.

2. **Optional Documentation**

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.



# 1. ASUS Splendid

## 1.1 System Requirements

- For PCI-Express system with PCI-Express graphic card installed:  
Intel Pentium 4 2.8GHz processor or equivalent AMD processor or above
- For AGP system with AGP graphic card installed:  
Intel Pentium 4 2.4GHz processor or equivalent AMD processor or above
- 256MB system memory or above
- Windows 2000 Professional Edition with SP4 or Windows XP Professional/Home Edition with SP2
- DirectX 9.0 or above
- After ASUS NVIDIA series or ATI series latest display driver installed, users should install ASUS Enhanced Display Driver version 1.16 or above.
- An LCD or CRT monitor with 60 Hz refresh rate.

## 1.2 Introduction

The ASUS Splendid Video Enhancement Technology significantly improves the display quality of your system. Use this option to adjust the contrast, mode, or enhance display region.

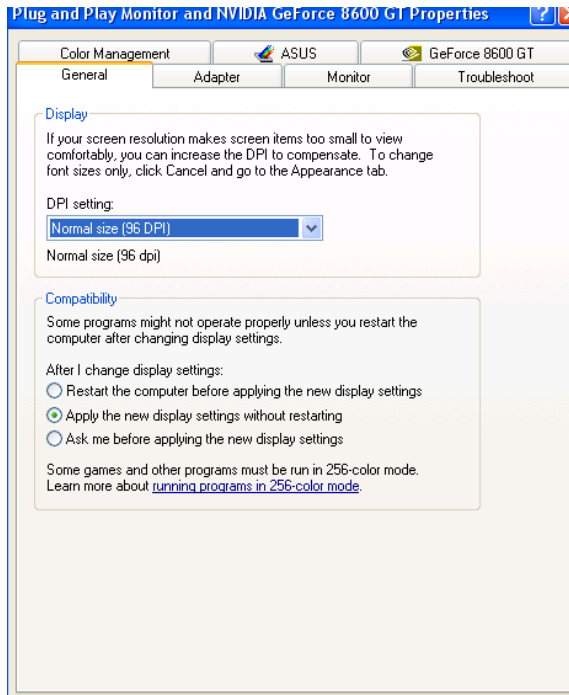




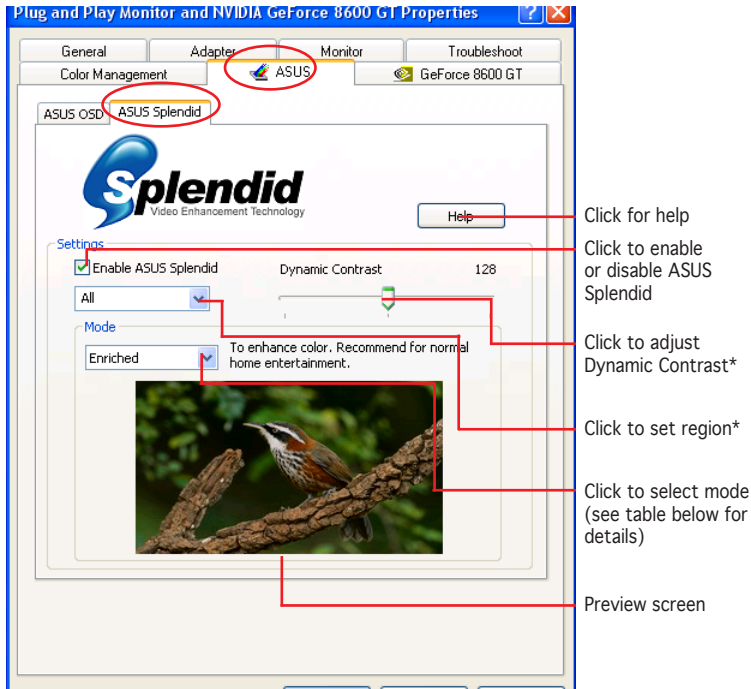
### 1.3 Launching ASUS Splendid

To launch ASUS Splendid:

1. Click the **Start > Control Panel**, and then find Display option. From the Display Properties dialog box, select the **Settings** tab then click **Advanced**. The following window appears (see the figure on the next page)



2. Select ASUS tab > ASUS Splendid to display the following.



\* Set Region

The options of Set Region are: All, Left only and Right only

\* Dynamic Contrast

With the Dynamic Contrast feature, ASUS Splendid is able to intelligently adjust the contrast according to the content on the screen. Whether it is the dark objects in the dark background or the light objects in the light background, ASUS Splendid is able to process without losing the detail.



Splendid Mode Table

MODE	Description
Enriched	Recommended for home entertainment systems.
Vivid Colors	Enhances saturation and contrast for a more saturated color.
Theater	Softer contrast for a theater-like effect.
Crystal Clear	Detailed enhancement with a bright effect.

3. Click OK to effect changes.

## 1.4 Limitation

1. The ASUS Splendid Video Enhancement Technology works only when the video has the overlay surface feature.
2. ASUS Splendid Video Enhancement Technology support video of the following pixel formats:
  - YUY2
  - UYVY
  - YV12
  - YVU9
  - NV12
3. In PCI-E system, the maximum resolution of the video which ASUS Splendid Video Enhancement Technology can support is 1280x720.
4. In AGP system, the maximum resolution of the video which ASUS Splendid Video Enhancement Technology can support is 720x480.
5. The QuickTime player won't have ASUS Splendid effect because it does not use the overlay surface to play video.



## 2. ASUS GamerOSD

ASUS GamerOSD allows you to share real-time gaming experience while playing full-screen games. Users can remotely monitor a live broadcast using the Internet Explorer browser. With the GamerOSD, you can also adjust GPU clock and image quality without exiting games.

### 2.1 System Requirements

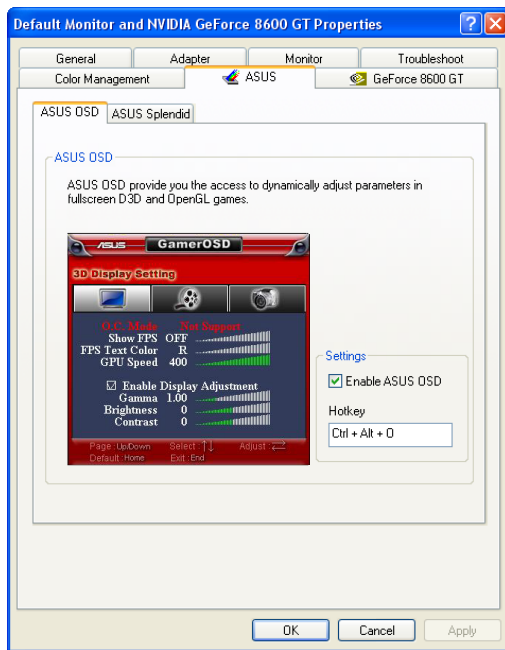
- Intel® Pentium™ III CPU or above
- ASUS graphic card (Users who use graphic card of other brands can only use GamerOSD for 30 days)
- 60MB available hard disk space or above
- 256MB system memory or above
- DirectX 9.0a or above
- Windows 2000 SP4, XP SP2, Vista

### 2.2 Enabling ASUS GamerOSD

After installing ASUS GamerOSD from the software CD, you must enable this utility for first time usage.

To launch ASUS GamerOSD:

1. Right click on the empty space of Windows® desktop and select Properties. From the Display Properties dialog box, select the Settings tab then click Advanced.
2. Select the ASUS tab then ASUS OSD to display the options (see the figure on the next page).
3. Click the Enable ASUS OSD check box.
4. Click on the Hotkey textbox then press desired keys. The **Ctrl** and **Alt** keys are default keys.
5. Click **OK** to apply settings and exit or click **Apply**. Click **Cancel** if you want to discard settings and exit.



## 2.3 User Interface

### 2.3.1 3D Display Setting





### O. C. Mode

When the current overclocking function is controlled by GamerOSD, the item shows Manual. If the HyperDrive feature in ASUS SmartDoctor is enabled, this item shows HyperDrive to suggest that the overclocking function is controlled by SmartDoctor.

### Show FPS

Sets to show/hide FPS on your monitor and choose where to display. Configuration options: OFF, L/T (left top), R/T (right top), R/B (right bottom), L/B (left bottom).

### FPS Text Color

Changes the text color of the FPS. Configuration options: R (red), G (green), B (blue), Y (yellow), W (white).

### GPU Speed

Allows you to adjust the GPU speed.

### Enable Display Adjustment

Press the right arrow key to enable and the left arrow key to disable this function. The following three items become configurable when you enable Display Adjustment.

### Gamma

Adjust the current Gamma value of the game.

### Brightness

Adjust the current brightness of the game.

### Contrast

Adjust the current contrast of the game.

## 2.3.2 Video Capturing



### Capture Mode

Shows Movie if you select Movie in the GamerOSD setup menu. This item shows Broadcast if you previously select Broadcast.

### Start/Stop

When the Movie mode is selected, this item shows the hotkeys for starting/stopping recording games. In Broadcast mode, this item shows N/A.

### Current Client(s)

Shows 0 in Movie mode. In Broadcast mode, this item shows the number of connected viewers watching your broadcast.

### Capture Size

Shows the resolution of the captured videos. This item is set in Advanced Setting in the GamerOSD setup menu.



### Capture Rate

Shows the frame rate of the captured videos. This item is set in Advanced Setting in the GamerOSD setup menu.

### Start Capturing

In Movie mode, press the right/left arrow key or the set hotkeys to start/stop recording games. A red blinking dot appears on the bottom left corner of your screen when recording. The recorded videos are automatically saved to the Movie folder and named by date.



In Broadcast mode, press the right/left arrow key to start/stop broadcasting games.

## 2.3.3 Screenshots



### Screenshot Mode

Allows you to shift the image capturing mode between Single and Multiple.

### Files Format

Allows you to select the image files format.  
Configuration options: bmp, gif, jpg.





The following two items are enabled when you select Multiple screenshot mode.

#### Capture Numbers

Allows you to set the number of screenshots captured consecutively. Configuration options: 3, 4, ~ 9, 10.

#### Capture Interval (sec)

Allows you to set the capture interval by second. Configuration options: 1, 2, ~ 5.

#### Hot Key

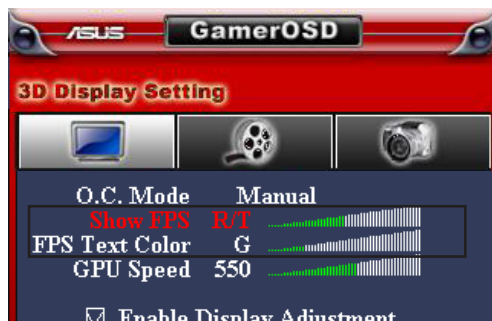
Shows the hotkeys for capturing screens. Press the set hotkeys to capture screens. The images are automatically saved to the ScreenShot folder and named by date.

## 2.4 Using GamerOSD

### 2.4.1 Using 3D Display Function

**To benchmark the graphic card performance while playing games:**

1. Start a full-screen DirectX or OpenGL game.
2. Launch GamerOSD (Ctrl+Alt+O)
3. Select Show FPS from the 3D Display Setting.
4. Choose where on the screen to display the FPS, the options include L/T (Left/Top), R/T (Right/Top), L/B (Left/Bottom) and R/B (Right/bottom).
5. Choose the text colour for FPS, the options include R (Red), G (Green), B (Blue) and Y (Yellow).





### To overclock while playing games:

1. Start a full-screen DirectX or OpenGL game.
2. Launch GamerOSD (Ctrl+Alt+O)
3. Select GPU Speed from the 3D Display Setting.
4. Use the Left/Right keys on your keyboard to decrease/increase GPU speed.
5. Check the FPS information to see if the current GPU speed is set properly.

### 2.4.2 Using Video Capturing Function

#### To capture the video of your playing games:

1. Start a full-screen DirectX or OpenGL game.
2. Launch GamerOSD (Ctrl+Alt+O)
3. Using the Left/Right keys on your keyboard to adjust the Capture Size and Capture Rate. The available Capture Size are 320x240, 640x480 and 720x480, the available Capture Rate are 10, 15, 20, 25 and 30 fps.



4. Using hot keys or select **Start Capturing** to start record.
5. The default format of the video is WMA, if you want to change to other format, click the GamerOSD icon from your desktop task bar. From the menu appears, click **Advanced Setting** to display the Advanced Setting menu, find the **Movie Format** bar, then choose **WMA** or **XviD MPEG-4** from the drop down list.

5. The default format of the video is WMA, if you want to change to other format, click the GamerOSD (figure 1) icon from your desktop task bar. From the menu appears (figure 2), click **Advanced Setting** to display the Advanced Setting menu (figure 3), find the **Movie Format** bar, then choose **WMA** or **XviD MPEG-4** from the drop down list.



figure 1

figure 2

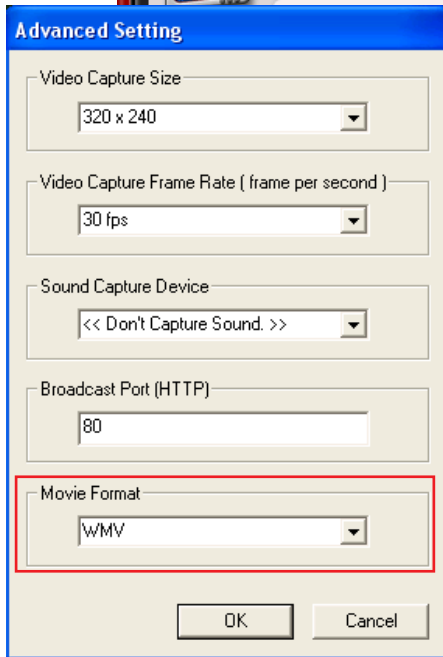
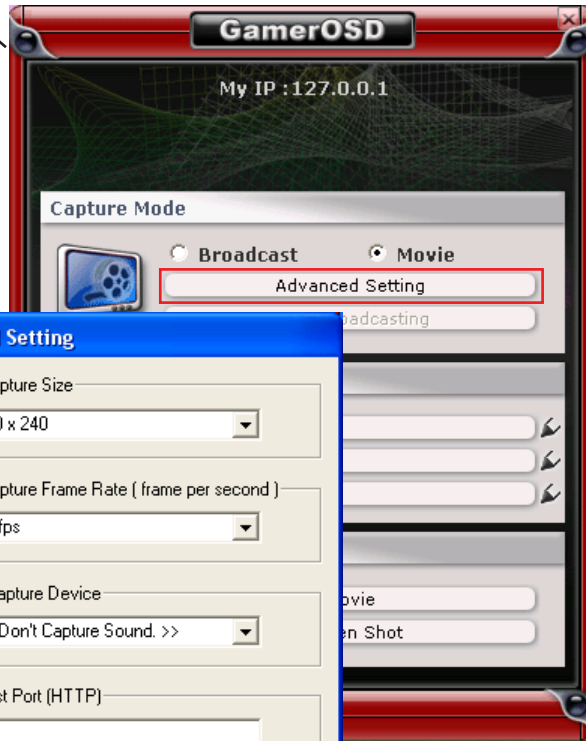
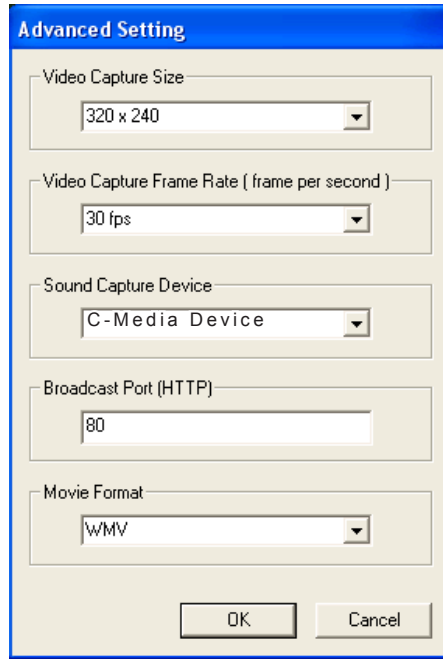



figure 3



- Set the **Sound Capture Device**. Normally, GamerOSD automatically find your sound capture device. Configure this item only when GamerOSD cannot find a sound capture device or the recorded video has no sound.



- To set hotkeys, click  behind **GamerOSD**, **Record Movie** and **Screen Shot** bars.  
To view the saved movie and screen shot, click **Movie** or **Screen Shot** bar.





### To broadcast games with GamerOSD:

1. Choose **Broadcast** and then click **Start Broadcast** bar.  
An icon appears in the desktop task bar showing that Broadcast is enabled.



2. Choose **Broadcast** and then click **Start Broadcast** bar.  
An icon appears in the desktop task bar showing that Broadcast is enabled.
3. Start a full-screen DirectX or OpenGL game.
4. Launch GamerOSD (Ctrl+Alt+O).
5. Select **Start Capturing** from the Video Capturing screen.





6. If you want to adjust the **Capture Size** and **Capture Rate** while playing games, click the GamerOSD icon on the right bottom of the screen in the windows task bar, then click **Advanced Settings**.

### To let your friends watch your game on broadcast simultaneously

Find your IP address on the top of the GamerOSD screen (see figure below) and tell your friend the IP address.



To watch your game playing broadcasting, you friend needs to complete the following steps:

1. Launch Internet Explorer.
2. Go to **Tools > Internet Options**.
3. From the Internet Options dialog box, select the **Security** tab then click the **Trusted Sites** icon.
4. Click **Sites** to display the Trusted sites window.
5. Key in the Internet Protocol (IP) of the broadcast host on the text box then click **Add**.
6. Click **OK** when done or Cancel to discard changes.
7. Click **Custom Level** to display the Security Settings window.
8. Enable all items then click **OK**.
9. Click **OK** to exit the Internet Options dialog box.
10. Open the IE explorer again and enter your IP address in the address bar and your friend can start to watch your game on broadcast.

### 2.4.3 Using Screenshots Function

#### To use the Screenshots function:

1. Start a full-screen DirectX or OpenGL game.
2. Launch GamerOSD (Ctrl+Alt+O).

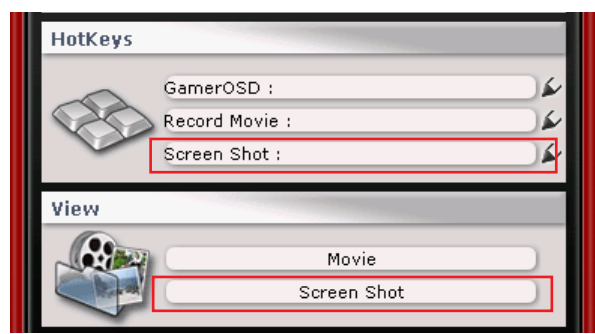




3. Select the Screenshot Mode, File Format, Capture Numbers and Capture Interval (see the figure below).



4. Press the hotkeys to start capturing game playing screen.
5. Users can change the hotkeys and view the screen captures using the interface below.





## 3. ASUS SmartDoctor

ASUS SmartDoctor is a powerful utility designed to perform three major functions including: overclocking, monitoring, and cooling.

### 3.1 System Requirements

- Operating System: Windows 2000/XP/XP64/Vista32
- Minimum Hard Disk Space: 20MB
- Hardware: ASUS ATI Series Graphics Cards, ASUS NVIDIA Series Graphics Cards
- Software: ASUS GamerOSD



Some functions mentioned in this manual are only available when ASUS GamerOSD is installed.

ASUS SmartDoctor does not support ATI RADEON LE and SE graphics cards.

ASUS SmartDoctor provides only the overclocking feature if your graphics card does not have a monitor IC.

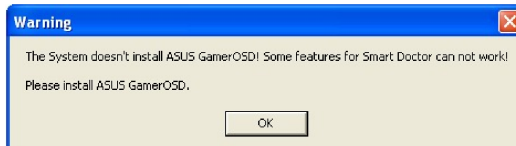
### 3.2 Features

- Monitors graphic chip temperature, fan speed, and voltage.
- Notifies user about irregular hardware events, such as temperature overheat, fan malfunction, and out-of-safe-range voltage.
- Smartly cools down the graphic chip when the graphics chip temperature is over the threshold temperature.
- Automatically adjusts the fan speed according to the GPU temperature.
- Allows adjustment of monitor values to fit the system requirement.
- Allows manual adjustment of GPU core and memory clock.



Some functions mentioned in this manual are available only when ASUS GamerOSD is installed. If the ASUS GamerOSD is not installed, SmartDoctor will display a warning message after starting SmartDoctor.

#### SmartDoctor warning message when system does not install ASUS GamerOSD

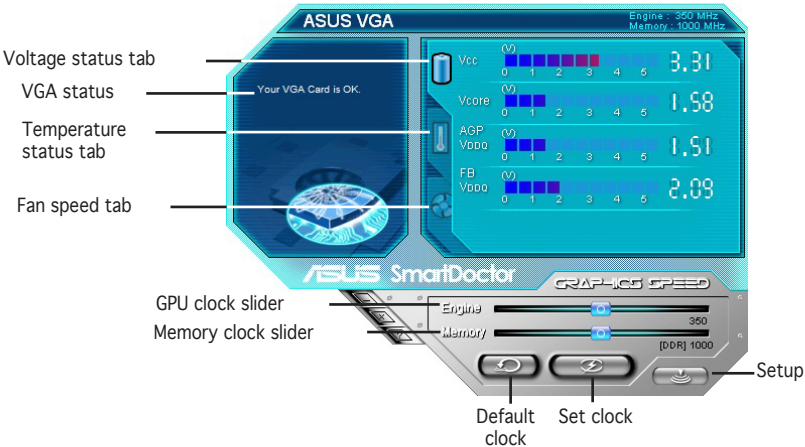






### 3.3 Launching ASUS SmartDoctor

The ASUS SmartDoctor utility is a memory resident program that is launched everytime you start Windows and remain in the computer memory to check the graphics card status. To access the ASUS SmartDoctor menu and its functions, double-click on the SmartDoctor icon found on the Windows taskbar, or from **Start > program** list.



- For graphics cards with a monitor IC that only supports GPU temperature monitoring, ASUS SmartDoctor provides the overlocking and fan control functions only. For graphics cards without a monitor IC, ASUS SmartDoctor provides the overlocking function only

### 3.4 Voltage status

Click the Voltage status tab to display the voltage status of your graphics card.

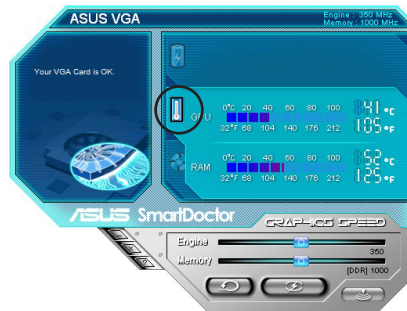




- The AGP bus VDDQ voltage and AGP bus 3.3 voltage should be supplied steadily by your motherboard. Otherwise, your system will crash.
- The FB VDDQ voltage item is grayed or disabled if your graphics card does not support voltage monitoring for this item.

### 3.5 Temperature status

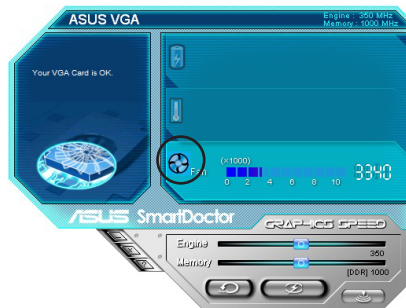
Click the Temperature status tab to display the GPU and RAM temperature status of your graphics card.



If your graphics card does not support RAM temperature monitoring, the item is grayed or disabled.

### 3.6 Fan speed status

Click the Fan speed tab to display the current fan speed of your graphics card.



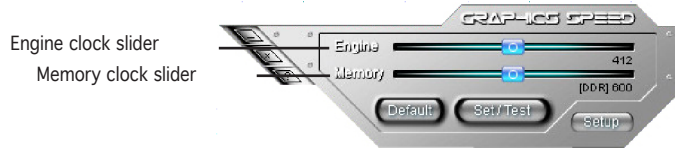


### 3.7 Engine and memory clock settings

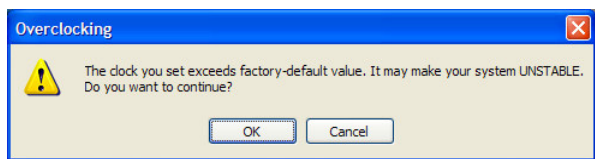
You can manually adjust the graphics card engine (GPU) and memory clock to enhance your graphics card performance.

To adjust the engine and memory clock:

1. Move the Engine clock slider to adjust the engine clock.
2. Move the Memory clock slider to adjust the memory clock.

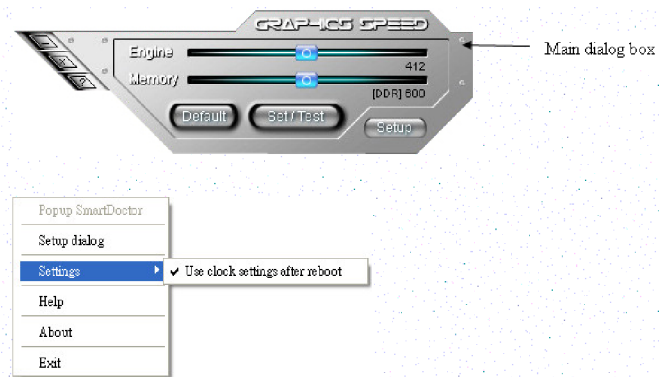


3. Press Set/Test button.
4. SmartDoctor displays a warning message. Click **OK**.



5. The engine clock you set appears on a dialog box. Click **OK**.
6. A 2D test program is launched to test the clock settings. The settings will be saved only if it passes the testing.


Right click the main dialog box and check **Use clock settings after reboot** to apply the GPU and memory clock settings.





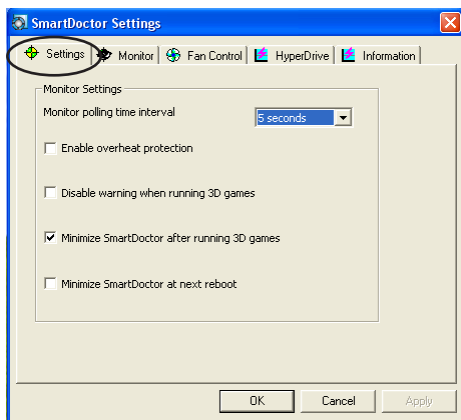
- The overclocking function does not work with the A9200SE/LE and A9600SE graphics cards.
- ASUS do not provide any warranty or support for any damage caused by improper use of this utility. Use this feature carefully. Before using this feature, carefully read the instructions.

## 3.8 Advanced setup features

To launch the SmartDoctor Settings dialog box, click  on the SmartDoctor menu.

### 3.8.1 Settings

To change the settings, click the Settings tab from the SmartDoctor Settings dialog box.



#### Monitor Settings

To change monitor settings:

1. Set **Monitor polling time interval**.
2. Click the check box to enable or disable any of the monitor setting features.
3. Click **Apply** or **OK** to save settings.





## Monitor polling time interval

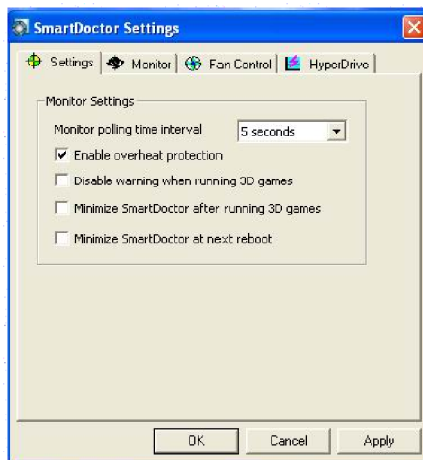
ASUS SmartDoctor constantly monitors your graphics card hardware status. You can determine how often the SmartDoctor detects the monitor values by selecting the time interval from the dropdown list of **Monitor polling time interval**. For example, if you set the monitor polling time interval to 5 seconds, SmartDoctor will detect the monitor values every 5 seconds.



## Enable Overheat Protection

When enabled, ASUS SmartDoctor automatically decreases your GPU clock whenever an abnormal event is detected to prevent further GPU temperature increase.

Click the check box to enable or disable overheat protection feature.

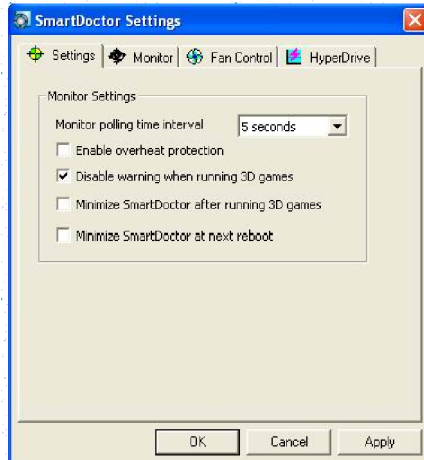




## Disable Warning when running 3D games

SmartDoctor provides an option to disable warning when running 3D games. When enabled, ASUS SmartDoctor will not prompt a warning message until you exit playing 3D games.

Click the checkbox to enable or disable **Disable warning when running 3D games**.

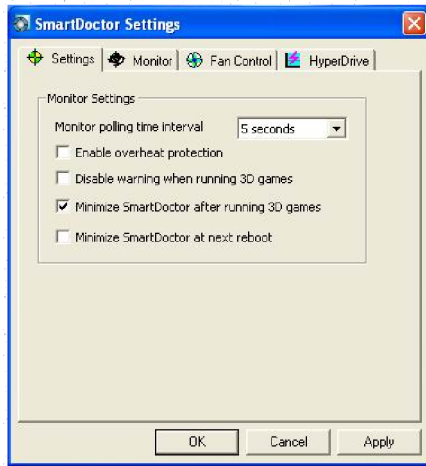


The **Disable warning when running 3D games** option is only available when the ASUS enhanced driver is installed in your system.

## Minimize SmartDoctor after running 3D games

SmartDoctor provides an option to Minimize SmartDoctor after running 3D games. When enabled, ASUS SmartDoctor will minimize after you play 3D games.

Click the checkbox to enable or disable **Minimize SmartDoctor after running 3D games**. SmartDoctor sets this option default value is enable.

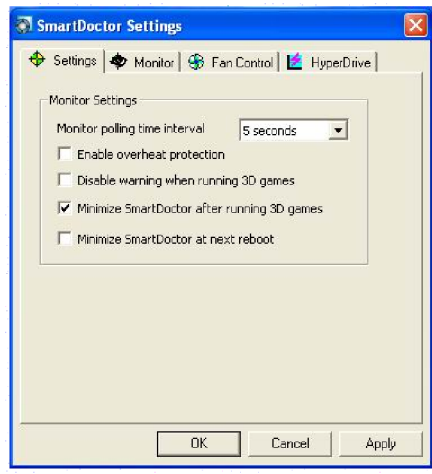


The **Minimize SmartDoctor after running 3D games** option is only available when the ASUS enhanced driver is installed in your system.

### Minimize SmartDoctor at next reboot

SmartDoctor provides an option of **Minimize SmartDoctor at next reboot**. When enabled, ASUS SmartDoctor will minimize after next reboot.

Click the checkbox to enable or disable **Minimize SmartDoctor at next reboot** feature.

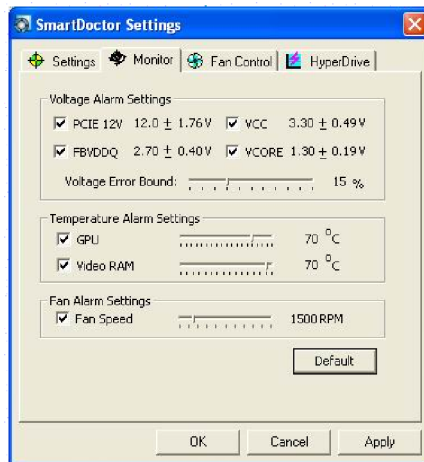




### 3.8.2 Monitor

To change voltage, temperature, and fan monitor settings:

1. Click the **Monitor** tab from the SmartDoctor Settings dialog box.



#### Voltage Alarm Settings

- Click the check box to enable or disable the alarm for AGPVDDQ (for AGP cards) or PCIE 12V (for PCIe cards), VCC, FBVDDQ or VCORE voltages.
- Move the slider to adjust the Voltage Error Bound percentage. For example, if you set the error bound to 15%, SmartDoctor will set the safe range of AGPVDDQ from 1.28(1.5 - 0.22) to 1.72(1.5 + 0.22). When SmartDoctor detects the AGPVDDQ value is above 1.72 or below 1.28, it displays an abnormal event message.

#### Temperature Alarm Settings

- Click the check box to enable or disable the alarm for the GPU and Video RAM temperature.
- When enabled, you can move the slider to adjust the GPU or Video RAM alarm temperature.

#### Fan Alarm Settings

- Click the check box to enable or disable the Fan speed alarm.
- When enabled, you can move the slider to adjust the fan speed.



Click the Default button to load optimum values for stable performance.







2. Click **Apply** to apply settings or click **OK** to save settings and exit. Click **Cancel** to discard changes and exit.

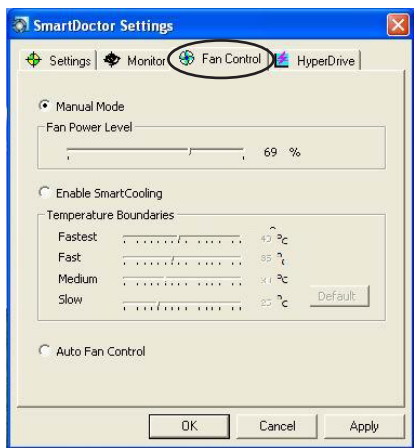


For graphics cards with a monitor IC supporting GPU temperature monitoring only, ASUS SmartDoctor only provides the overclocking and fan control functions.

### 3.8.3 Fan Control

To change the fan control settings:

1. Click the **Fan Control** tab from the SmartDoctor Settings dialog box.



2. Click the option buttons to select fan control feature. The fan control has three features: Manual mode, SmartCooling, and Auto Fan Control.

Manual mode - To manually change the fan speed by adjusting the slider of each temperature mode.

Enable Smartcooling - SmartDoctor will automatically adjust the fan speed according to the GPU temperature. For example, if the GPU temperature rises over 60 degrees Celsius, SmartDoctor will raise the fan speed to the fastest level to cool the GPU. Move the slider to adjust the temperature for fan speeds or click **Default** to load optimum settings.

Auto Fan Control - SmartDoctor automatically adjusts the fan speeds for optimum performance.



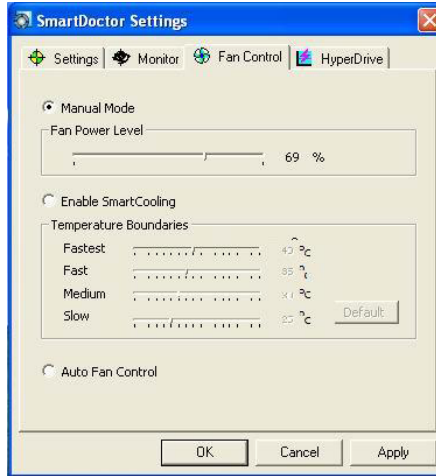
The Fan Control tab is not displayed if your graphics card does not support the Fan Speed Control feature.

4. Click **Apply** to apply settings or click **OK** to save settings and exit. Click **Cancel** to exit and discard changes.



## Manual mode

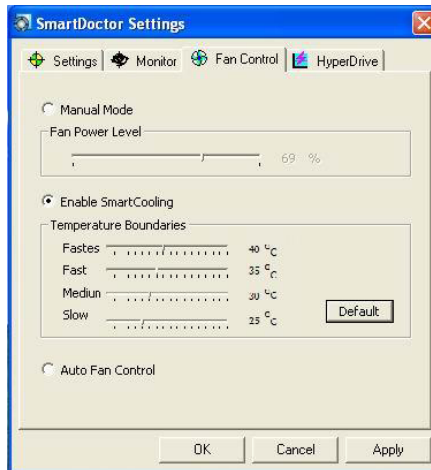
In manual mode, you can set the fan speed at a fixed rate. Using the fan power level slider to adjust the fan speed. Setting the power level to 100% means that the fan will run at full speed, while 0% will stop the fan.



Only V9180 series or newer models support this feature. .

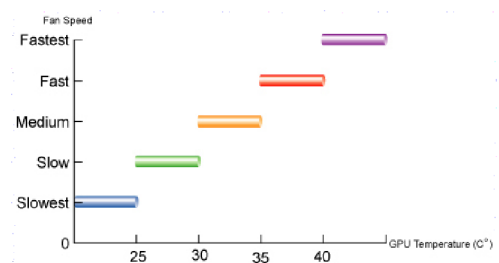
## Enable Smartcooling

SmartCooling adjusts the fan speed according to the GPU temperature. When SmartCooling is enabled, you have to define the temperature boundaries for SmartCooling.





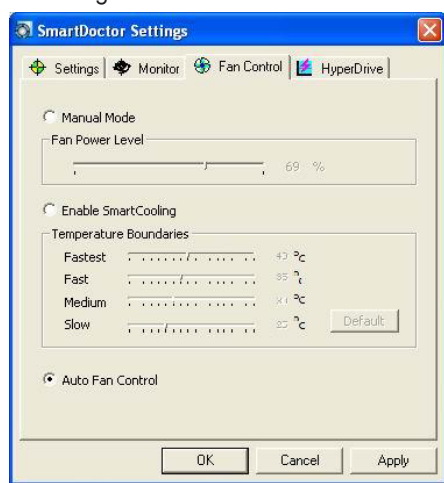
There are five fan speed levels and four temperature boundaries (see the figure below). When the GPU temperature goes beyond 40 degrees Celsius, ASUS SmartCooling will cool down the GPU with the full fan speed (Fastest level). When the temperature falls between 40 and 35 degrees Celsius, the fan speed will be set at fast level.



Click the **Default** button to restore default temperature boundary settings.

### Auto Fan Control

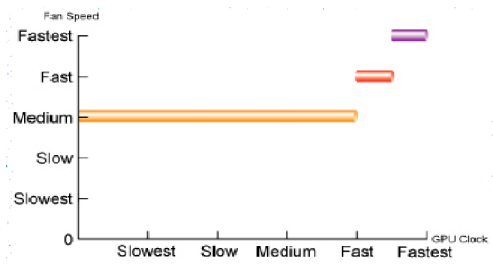
When you enable Auto Fan Control feature, the fan speed will adjust automatically according to GPU Clock.



There are different fan speed levels (eg. medium, fast and fastest). The default value of the fan speed is medium. The fan speed automatically rises when GPU clock speed rises (see the figure on the next page), and also adjust to the fastest level while playing 3D games.



This feature is only available when the ASUS GamerOSD driver is installed.



### 3.8.4 HyperDrive

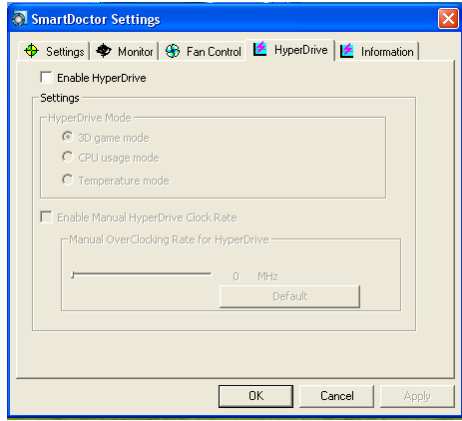
ASUS HyperDrive is a dynamic overclocking mechanism that allows overclocking manually. When this feature is enabled, the GPU and video memory will work at the speed you set. Under some circumstances- however, you may want your graphics card to work at different clock speeds to get the best possible performance. If you enable ASUS HyperDrive, the slider in the main page for manual overclock will be disabled.



ASUS do not provide any warranty or support for the damages caused by improper using of this utility. Read the relevant instructions carefully.

To change the ASUS HyperDrive settings:

1. Click the **HyperDrive** tab from the SmartDoctor Settings dialog box.

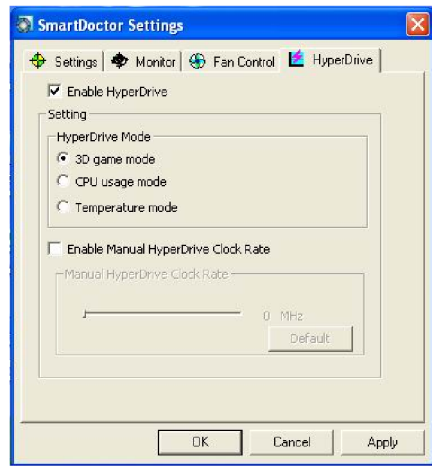




## ASUS HyperDrive

To activate HyperDrive:

1. Click the **Enable HyperDrive** check box to enable or disable the HyperDrive feature.
2. Click the option buttons to select the HyperDrive Mode.

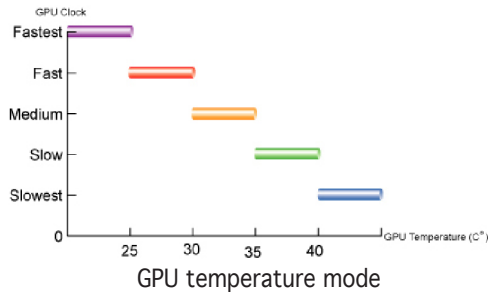


This page just only shows in version 4.54 and later.



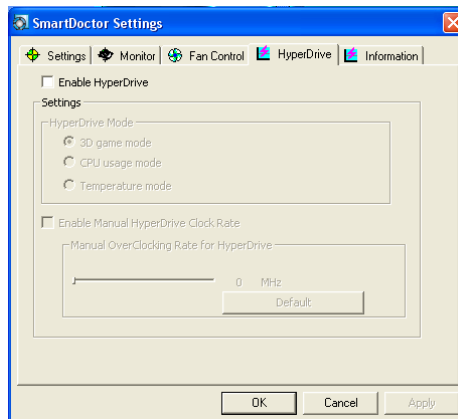
### HyperDrive Modes

- A. **3D Game mode** - In 3D Game mode, ASUS SmartDoctor automatically sets the GPU clock to its highest possible value when playing 3D games for better 3D performance. It reverts to its normal GPU core clock after playing 3D games. Make sure to install the ASUS Enhanced driver when using the HyperDrive 3D mode.
- B. **CPU usage mode** - When set to this mode, ASUS SmartDoctor dynamically adjusts the GPU core clock depending on the Central Processing Unit (CPU) work load. ASUS SmartDoctor increases the GPU core clock when the CPU is busy and decreases it when your CPU is idle.
- C. **GPU Temperature mode** - In Temperature mode, ASUS SmartDoctor smartly adjusts the GPU clock according to its temperature. If the GPU temperature increases, ASUS SmartDoctor automatically decreases the GPU core clock, and vice versa.



With the ASUS SmartCooling feature, the four temperature boundaries in the Fan Control page also defines the SmartDoctor thresholds for the GPU clock. In this mode, the lower the temperature, the better performance you can have.

3. When the HyperDrive is enabled, you can enable the Manual HyperDrive Clock Rate and move the slider to adjust the frequency.
4. Click **Default** to load optimum settings.



5. Click **Apply** to apply settings or click **OK** to save settings and exit. Click **Cancel** discard changes and exit.

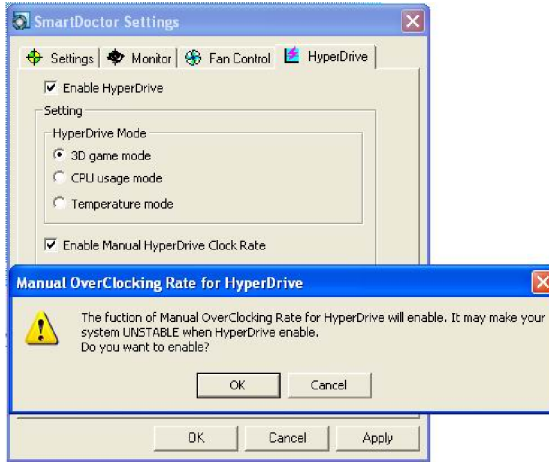
### Manual Overclocking rate for HyperDrive

Follow the steps below to set the engine Overclocking rate for HyperDrive:

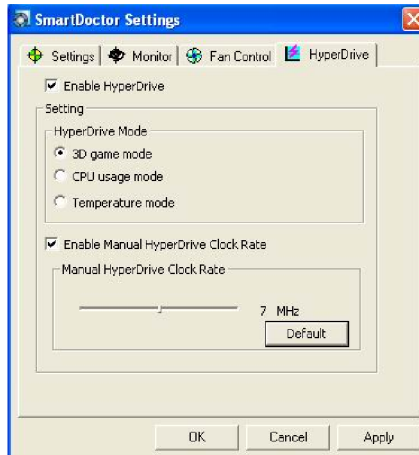


ASUS do not provide any warranty or support for the damages caused by improper using of this feature.

1. Click to enable “**Enable Manual HyperDrive Clock Rate**”, then SmartDoctor displays “**Manual OverClocking Rate for HyperDrive**” warning message.



2. Click **OK** button on the warning message.
3. Adjust “**Manual HyperDrive Clock Rate**” slider to obtain desired clock value.





4. Click **OK** button.

If you disable “**enable Manual HyperDrive Clock Rate**” box, the engine Overclocking rate for HyperDrive is set to the default value.



The default value for each ASUS graphics cards is different.

### 3.9 Abnormal Events

There are three type of abnormal events : unstable voltages, temperature overheat, and fan malfunction. When ASUS SmartDoctor detects an abnormal event, it will display a warning message on the upper-left side of the dialog box.



If you want ASUS SmartDoctor to inform you of abnormal events, enable the alarm settings in the monitor page.

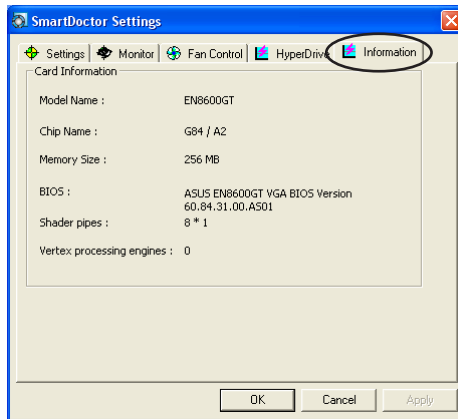
You can check the **Enable Overheat protection or Disable Warning When Running 3D games** in the setting page to facilitate abnormal event notification.





### 3.10 Information

The information tab displays the Model name, Chip Name, Memory Size, BIOS etc. information of your graphics.



The information page can not be displayed with some graphic cards.

### 3.11 Terminology

#### Overheat Protection

Overheat protection is an emergency mechanism that protect your graphics cards whenever an overheat or fan malfunction is detected. Also, ASUS SmartDoctor smartly cools down the graphic chip by decreasing the core clock to prevent further temperature increase.

#### SmartCooling

SmartCooling automatically adjusts the fan speed according to the GPU temperature. With this feature, you can define the SmartDoctor temperature threshold. With the Smart cooling enabled, the fan will not always run at full speed thus greatly reducing fan noise and extending its lifetime.



## HyperDrive

ASUS SmartDoctor allows you to set the GPU and memory clocks manually. With the HyperDrive function enabled, ASUS SmartDoctor takes over the overclocking job. It will fine tune the GPU clock according to the HyperDrive mode. For example, when 3D mode is set, ASUS SmartDoctor will automatically increase the GPU clock when running 3D graphics for better performance.

NOTE: For some models do not support HyperDrive.

## ASUS GamerOSD

The ASUS GamerOSD is for better 2D/3D graphics performance. It also provides some features necessary for various ASUS utilities, including SmartDoctor, GameFace and OSD(On Screen Display). Refer to your manual for details.

## GPU

A graphics processing unit (GPU) is a microprocessor that has been designed for processing 3D graphics. The processor is capable of handling millions of math-intensive processes per second. The GPU is the heart of modern graphics cards, relieving the CPU much of the graphics processing load.

## VCC

The supply voltage on a graphics card from AGP or PCIE bus. The standard voltage value should be around 3.3V.

## VCore

The supply voltage for the GPU on a graphics card. The standard VCore voltage value is slightly different from model to model.

## FBVDDQ

The working voltage of the memory on a graphics card. The standard FBVDDQ voltage value is memory-dependent.

NOTE: For some models do not monitor FBVDDQ value, ASUS SmartDoctor will disable the FBVDDQ item on the voltage page





### AGPVDDQ

The working voltage of the AGP bus on the motherboard. The standard VDDQ voltage value depends on the AGP speed running on your system.

NOTE: For some models do not monitor AGPVDDQ value, ASUS SmartDoctor will disable the AGPVDDQ item on the voltage page. ex: V9520 Video Suite and V9560 Video Suite

### PCIE 12V

The working voltage of the PCIE bus on the motherboard. The standard voltage value should be around 12V.

NOTE: For some models do not monitor PCIE 12V value, ASUS SmartDoctor will disable the PCIE 12V item on the voltage page. ex EN5900

The information tab displays the Model name, Chip Name, Memory Size, BIOS etc. information of your graphics.



## 4. ASUS VideoSecurity Online

### 4.1 System Requirements

Software:

- Microsoft WINDOWS 2000/XP/Vista with DirectX 9.0a or above.
- WDM Capture Driver for your capture devices.
- Internet Connection with Microsoft IE 6 SP1 or above.
- Microsoft Media Player 9.0 or above.

Hardware:

- Video capture devices, like Webcams, CCD, V8 or Hi-8, which support UYVY video format.
- A sound card or chip on-board is necessary if you want to use play the warning wave file.

Please also see ReadMe.txt for more details.

### 4.2 What's New





- VideoSecurity Online now works with all kinds of video capture devices, which support UYVY video format. It can also handles many different video connectors or interfaces such as USB, IEEE1394.
- When VideoSecurity Online detects something abnormal, it starts tracing the object and record its movement.
- A more user friendly History Logging interface gives you a clear idea of what's going on.
- Remote monitoring. Using web browser and ASUS WebRTP ActiveX control, you will be able to receive the streaming video data that has been transmitted from your local system through the Internet.
- New VideoSecurity Online supports dual devices with the functionality of preview, motion detection, tracing, snapshot, video recording and remote surveillance. It displays the History, Screen, Main panel windows in one screen, makes operating more convenient.
- VideoSecurity supports SkypeOut through Skype and brings users convenience.

### 4.3 Launching ASUS VideoSecurity

To launch ASUS VideoSecurity:

From the Windows taskbar, click the Start button then select **All Programs** -> **ASUS** -> **ASUS Video Security** -> **ASUS Video Security** to display the following menu.





**Setup:** opens the Setup dialog. You can't change settings while VideoSecurity Online is executing watchdog or tracing function.

**Video source:** changes the Video connector type.

**Set detect region:** use mouse to drag a rectangular region you want to detect.

ASUS VideoSecurity Online supports two video sizes, 320x240 and 640x480. Click to change the size.

**History:** When VideoSecurity Online detects any abnormal event, it records the date, time and other information.

VideoSecurity Online working modes includes Standby, Watchdog and Tracing.

- **StandBy:** in this mode, VideoSecurity Online does nothing but broadcast the video. You can only change settings in this mode.
- **WatchDog:** press **Start** to start detecting. You can press the **Stop** button to switch to the Standby mode.
- **Tracing:** When the tracing option is enabled, VideoSecurity Online starts trying catch the motion object(s), which cause any unusual situation. Users can manually stop tracing. VideoSecurity Online also stops tracing when the object is too small.
- **Streaming:** When **Enable HTTP server** option is enabled, ASUS VideoSecurity Online starts streaming if any remote client is connected to your local system. The streaming will be stopped while there's no client connection to your local system. To manually stop streaming, press the **Stop** button.





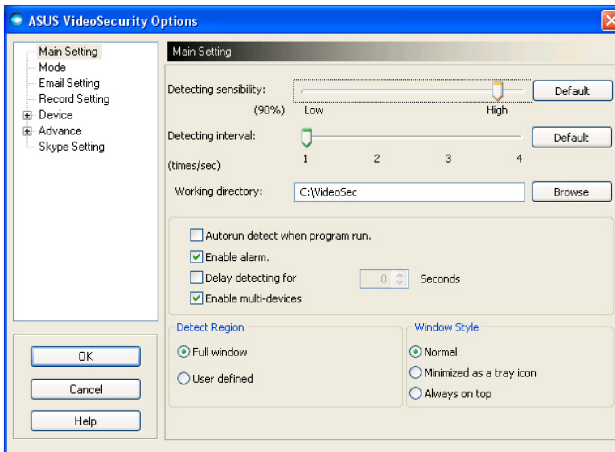
## 4.4 Setup

To display the ASUS VideoSecurity setup window, click from the ASUS VideoSecurity menu.

### 4.4.1 Main

The main settings section allows you to adjust the detecting sensibility, detecting interval and working directory. This section also contains the check boxes to enable various features including the alarm, autorun, use of multi-devices, and setting of detecting delay. You can also set the detect region and windows style in this section.

To modify the Main setup options, click **Main Setting** from the Video Security setup dialog box. The following submenu appears:



#### Adjusting the detecting sensibility parameter

To adjust the detecting sensibility:  
Move the slider to adjust the Detecting sensibility parameter. This item sets the receptibility of VideoSecurity to environment changes.

- OR -

Press Default to set pre-assigned values based on normal light and temperature conditions.





- Temperature and lighting may affect monitoring.
- The quality of the video capture device is also very important in setting the sensibility.
- Test different values to fine-tune this parameter for optimum performance.

**Setting the detecting interval parameter**

To set the detecting interval parameter:  
 Move the Detecting interval slider. The interval (times/sec) or scan rate has four configuration options: 1 times/sec, 2 times/sec, 3 times/sec and 4 times/sec.

- OR -

Click Default to set the recommended scan rate.

The default value of Detecting interval is 2 frames/sec. The higher the scan rate is, the more accuracy the detection could be, the more CPU usage you need. If you want VideoSecurity Online and other applications (like Office, network) to run simultaneously, choose a lower scan rate to release CPU usage to other applications.



Set to a higher scan rate for a more accurate detection.

**Setting the working directory**

To set the working directory:  
 Key in the working directory on the textbox or click Browse to locate and set the working directory.

The default working directory is C:\VideoSec, if Windows roots in disk C. Everytime you launch ASUS VideoSecurity, a new folder is created. The folder filename indicates the current time and date the application was launched. For example, "2005.06.16\_04.20.10" means that ASUS VideoSecurity was launched on June 06, 2005 at 4:20:10 AM.



Do not change the working directory name while ASUS VideoSecurity is running. Doing so will cause a runtime error!





## Setting other features

To enable or disable the autorun feature, alarm, use of multi-devices and/or set the detecting delay:

- Click the Autorun detect when program run check box to enable or disable the autorun feature of ASUS VideoSecurity. When this item is enabled, VideoSecurity Online will auto-run when system boots. This option is helpful when you use remote control over your computer.

Autorun detect when program run.

- Click the Enable alarm check box to enable or disable the alarm feature. When this item is enabled, VideoSecurity Online can alert user when VideoSecurity Online detects any unusual condition. Before use this option, make sure your PC has properly installed a sound card.

Enable alarm.

- Click the Delay detecting for XXX seconds check box to enable or disable the delay feature when a motion is detected. Key in or click the arrows to set the delay (in seconds).

Delay detecting for  Seconds

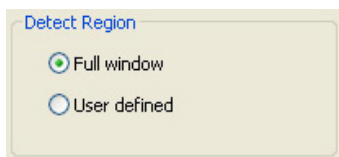
- Click the Enable multi-devices check box to enable or disable the alarm feature. This option allows you to switch to single device mode or double devices mode for VideoSecurity Online.

Enable multi-devices

## Setting the detection region

To set the detect region, click the Detect Region option buttons.

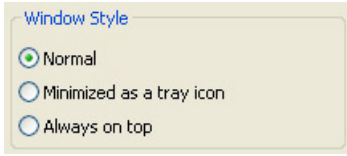
If you select Full Window, VideoSecurity Online will monitor the whole visible area. If you select User Defined Region, VideoSecurity Online will only detect changes within the specific region you set. The default value is Full window.





## Setting the Windows display style

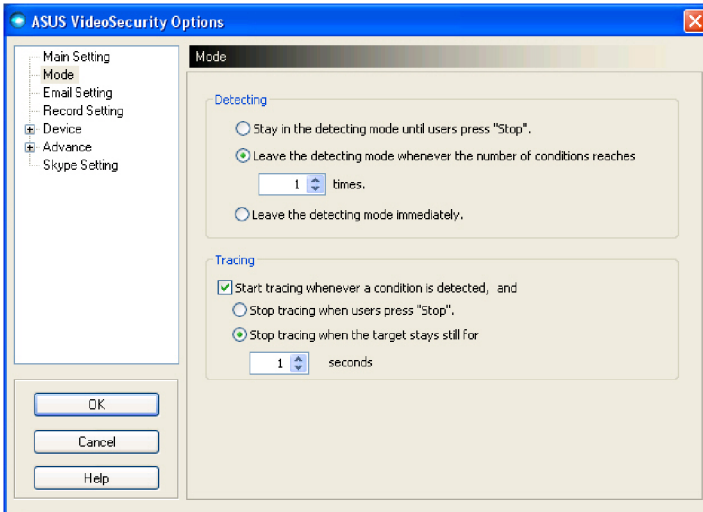
To set the Windows display style, click the Window Style option buttons.



Make sure to click OK after making changes.

### 4.4.2 Mode

The Mode section allows you to configure the Detecting and Tracing method. To modify the mode settings, click the Mode item from the ASUS VideoSecurity setup dialog box. The following submenu appears:



## Setting the detecting mode

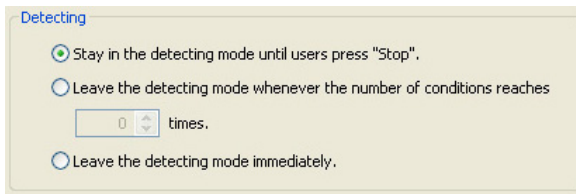
To set the detecting mode:

Click the option button of your desired mode. The following describes the available configuration options:





- Stay in the detecting mode until users press “Stop” - when a condition is detected, VideoSecurity will continue detecting the region until you press the Stop button on the main menu.
- Leave the detecting mode whenever the number of conditions reaches **n** times - this option allows you to set the maximum number of conditions **n** before VideoSecurity stops detecting a region. To set **n**, key in your desired number in the text box or click the arrows to adjust the desired maximum number.
- Leave the detecting mode immediately - This is the default option. If any unusual condition is detected, VideoSecurity Online stops watchdog function immediately.

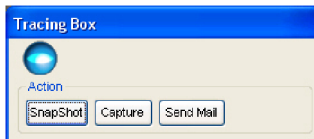


#### Setting the tracing method

To set the tracing method:

Click the **Start tracing whenever a condition is detected** check box to have VideoSecurity Online not only detects conditions, but also can trace the motion object. The tracing modes are:

- **Stop tracing when user's press “Stop”** - When there is an event, VideoSecurity online starts to trace the motion object(s) and prompt a Tracing Box to provide you with more options.



- **Stop tracing when the target stays still for **x** seconds** - automatically stops tracing when the detect region remains still for **x** seconds. To set **x**, key in the number in the text box or click the arrows keys to adjust value.



**Tracing**

Start tracing whenever a condition is detected, and

Stop tracing when users press "Stop".

Stop tracing when the target stays still for  seconds



Make sure to click OK after making changes.



When Tracing Box prompts, users can snapshot or capture by themselves, all the recorded files are saved at the current working directory you specified.

### 4.4.3 Email setting

The Email setting section contains the email parameters necessary to send an email when the email alarm feature is enabled. To modify the email settings, click the Email Setting item from the setup dialog box. The following submenu appears:

**ASUS VideoSecurity Options**

- Main Setting
- Mode
- Email Setting**
- Record Setting
- Device
- Advance
- Skype Setting

**Email Setting**

**Sending Email**

Sending out an email for warning.

To:

CC:

BCC:

Subject:

Body:

Settings:

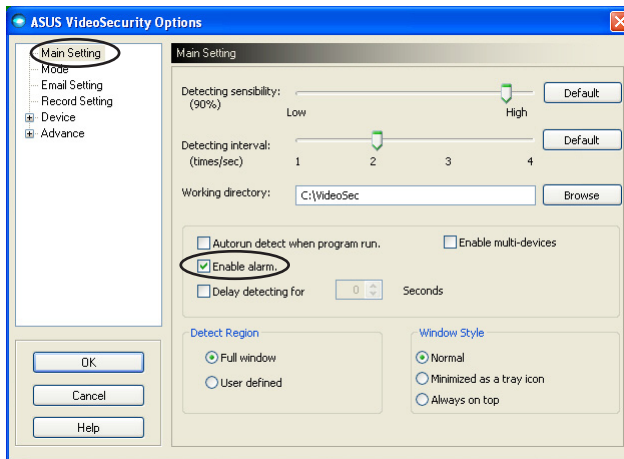
OK Cancel Help



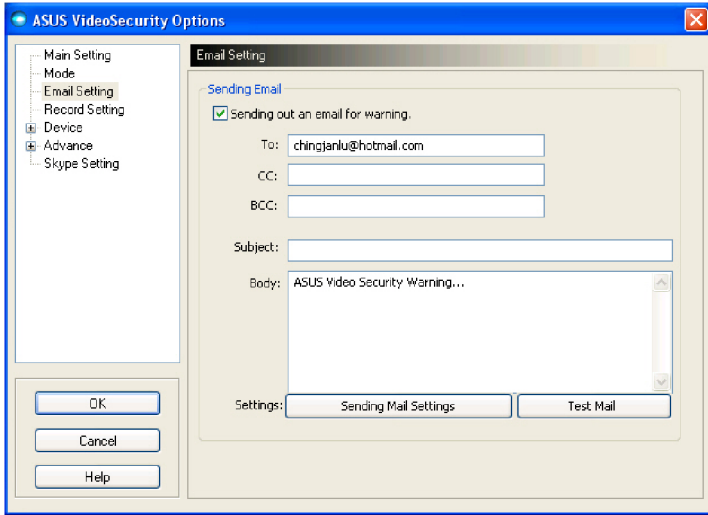
## Using the email warning feature

To use the email warning feature:

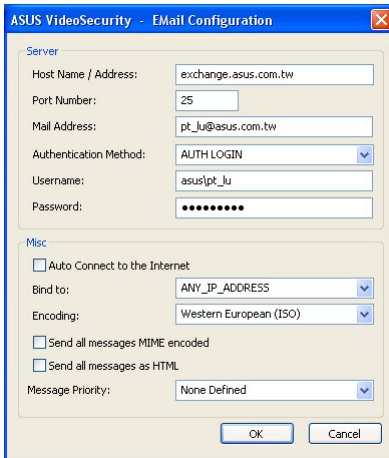
1. From the Main Setting section, click to check Enable alarm.



2. Click the Email Setting item from the setup dialog box then click to enable Send out an email as warning.
3. Key in the email address(es) of the recipient(s), the subject, and body content. The following describes these email parameters:
  - To
  - CC
  - BCC
  - Subject
  - Body



4. Click **Sending Mail Settings** to configure the email parameters. The following window appears:



If necessary, consult your system administrator for authorization and other server parameter settings.

### Server

Contains the parameters and protocols necessary to send your email. Key in the host name/address, port number, mail address, authentication method, username, and password. The following describes the server parameters:



Host Name/Address - refers to the simple mail transfer protocol (SMTP) server address that is used to transfer mail over the Internet. Example: exchange.companyname.com or 149.112.144.153.  
Port Number - the number identifying the type of connection requested by a remote computer on the Internet. The default value is 25.

Mail Address - refers to the sender's email address.

Authentication method - refers to preferred server authentication method when checking the user name and password.

Username - refers to your user account name.

Password - secret set of characters and/or numbers required to access a computer system. In this case, to allow you to send and receive emails.

### Misc

The Misc group contains miscellaneous parameters and server settings. Refer to the following parameter descriptions:

Auto Connect to the Internet - when enabled, the utility will check if an Internet connection already exists. If the connection between the IP you bind and the destination mail server can't be established, the utility will automatically dial-up. Click the check box to enable or disable this feature.

Bind to - selects your local IP to bind for Internet connection. Click the list box to select IP.

Encoding - sets the encoding method for the character set of email sent. Click the list box to select encoding method.

Send All messages MIME encoded - allows support for multipurpose Internet mail extensions (MIME) character sets. Click the check box to enable or disable this feature.

Send All messages as HTML - allows you to send your messages in hypertext markup language (HTML) format. Click the check box to enable or disable this feature.

Message Priority - sets the email message priority level. Click the check box to enable or disable this feature.

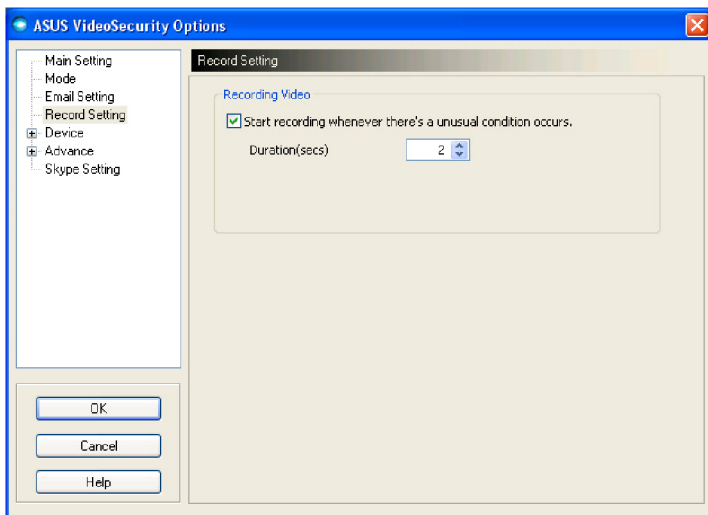
5. Click OK to save the configuration or Cancel to abort.
6. Click Test Mail to test your email configuration.
7. When finished, click OK to save settings and exit.





#### 4.4.4 Record setting

The Record setting section contains parameters that allows you to configure the recording duration whenever condition is detected. To set the recording parameters, click the Record setting item from the setup dialog box. The following submenu appears:



To set the recording parameters:

1. Click to enable Start recording whenever there's an unusual condition occurs.
2. When enabled, key in or use the arrows to set the recording duration in seconds. The default value is 2 seconds.
3. Click **OK** to save settings and exit.

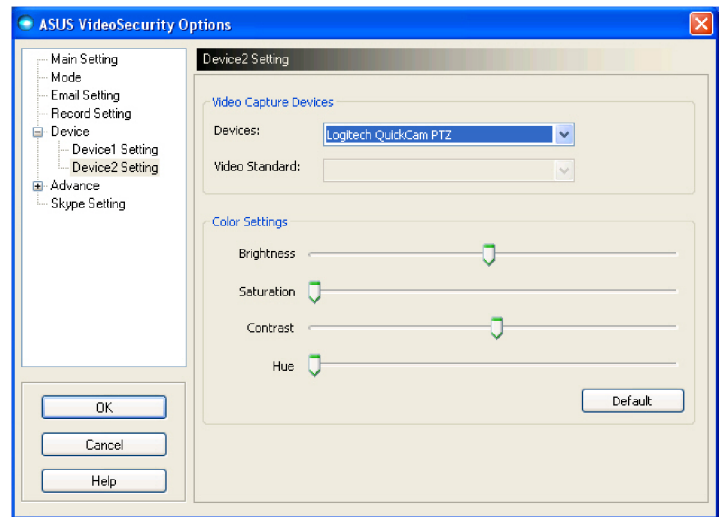
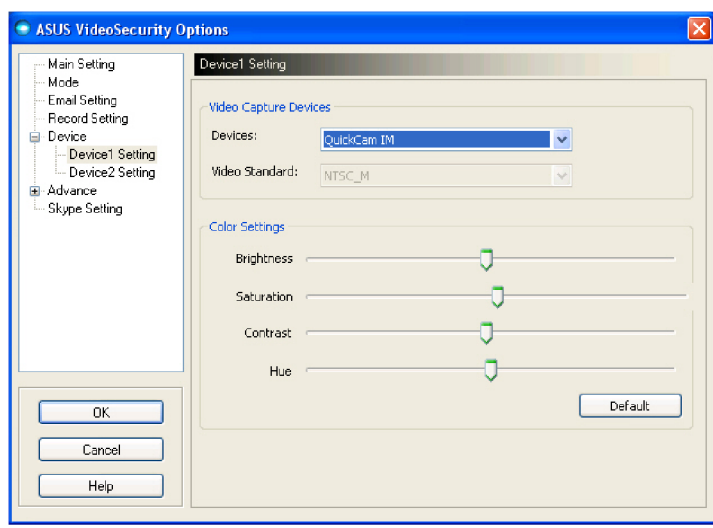






#### 4.4.5 Device

The Device section allows you to set the video capture devices and color settings. To select a video capture device or adjust color settings, click the Device Setting item from the ASUS VideoSecurity setup dialog box. The following sub-menu appears:

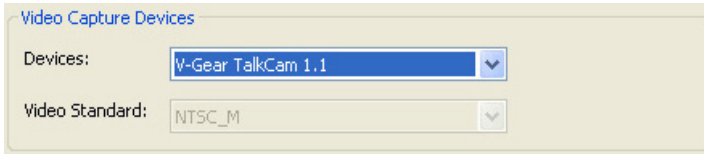




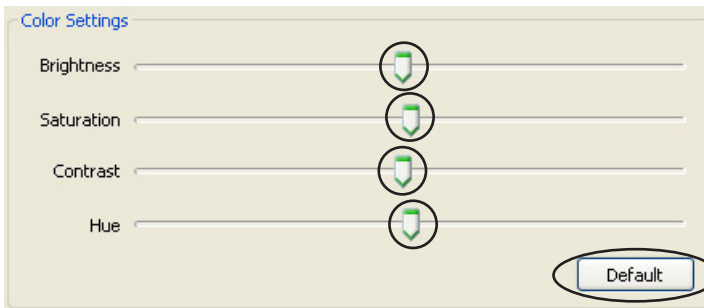
## Configuring capture device

To configure device:

1. Click the Devices list box to select video capture device.
2. Click the Video Standard list box to set the video standard in your area. The default video standard is chosen based on your system location.



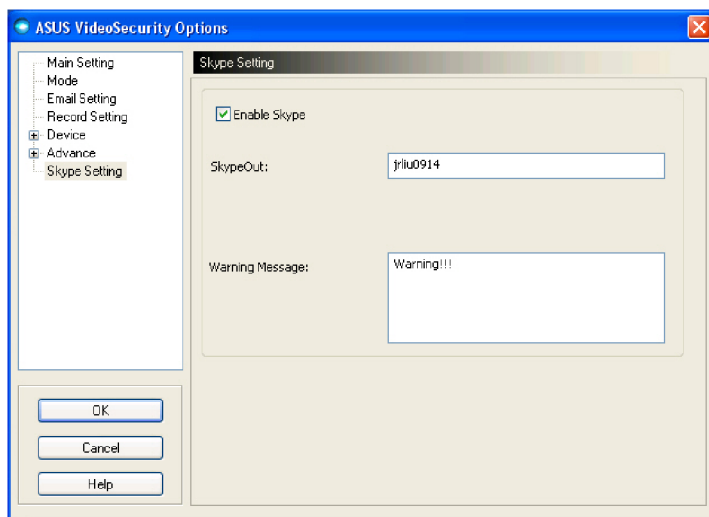
3. Move the slider to adjust the brightness, saturation, contrast or color hue. Click on the Default button to restore the default settings.  
- OR -  
Click Default to load recommended values.



4. Click OK to save settings and exit.



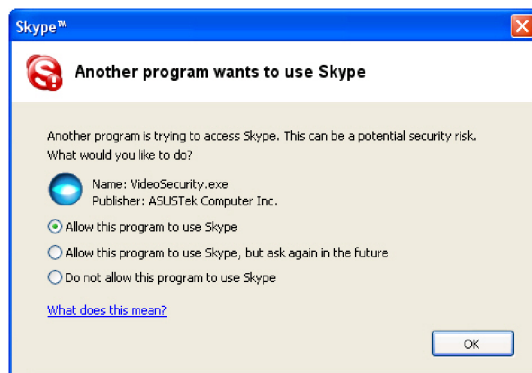
## 4.4.6 Skype Setting



**Enable Skype:** When enabled, ASUS VideoSecurity will work with Skype. If detects something wrong, users could be notified by skype.

Before using this function, users need to install Skype in their system and configure well.

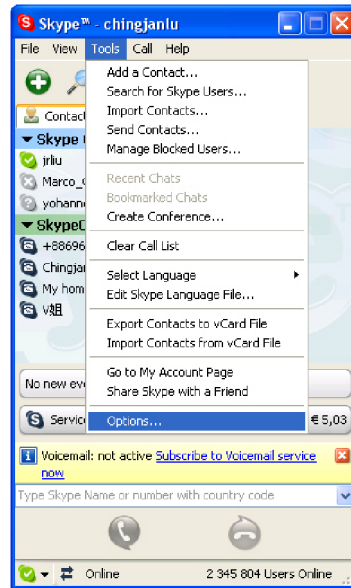
When enabling Skype function in the first time, a dialog box pops up as the following. Please select "Allow this program to use Skype", and then click OK. If you select "Do not allow this program to use Skype", VideoSecurity will be blocked from hosting Skype.



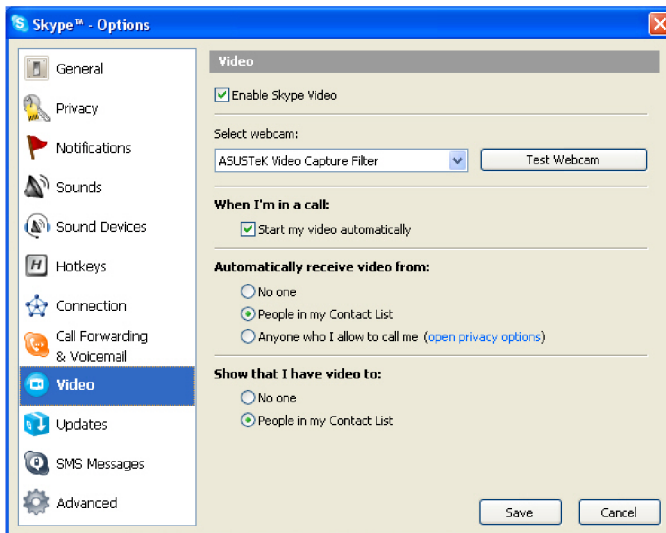


Video settings of Skype need to be configured, and please check the steps as followings:

1. Launch Skype.
2. Click [Tools] tab and select [Options...].
3. Click "Video" in the left part.



4. Select "Select webcam:" and choose "ASUSTek Video Capture Filter".
5. Click "Enable Skype Video" and "Start my video automatically".
6. Click **Save**.





The operation of remote surveillance from Skype looks like as followings (figure 1, 2 and 3).

If we have two webcams enabled in the server, we could use chat command "change source" (see figure 3) to switch the webcam you want to see.

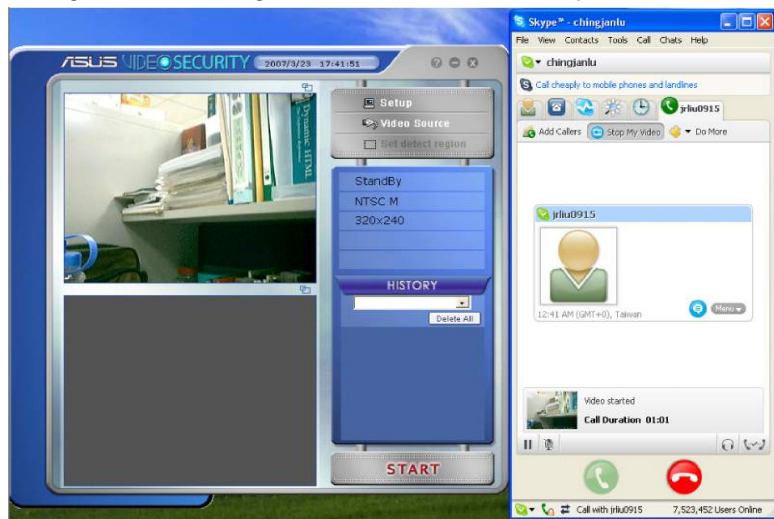


figure 1: home PC

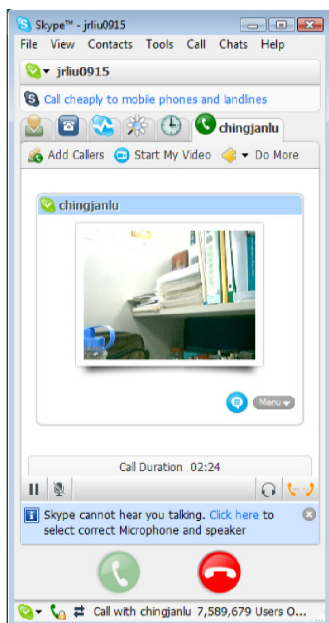


figure 2: remote side PC

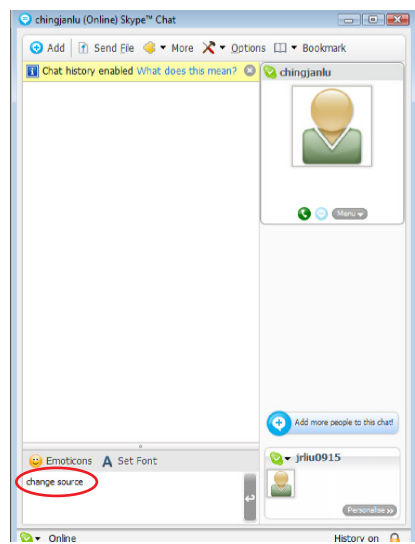


figure 3: remote side PC



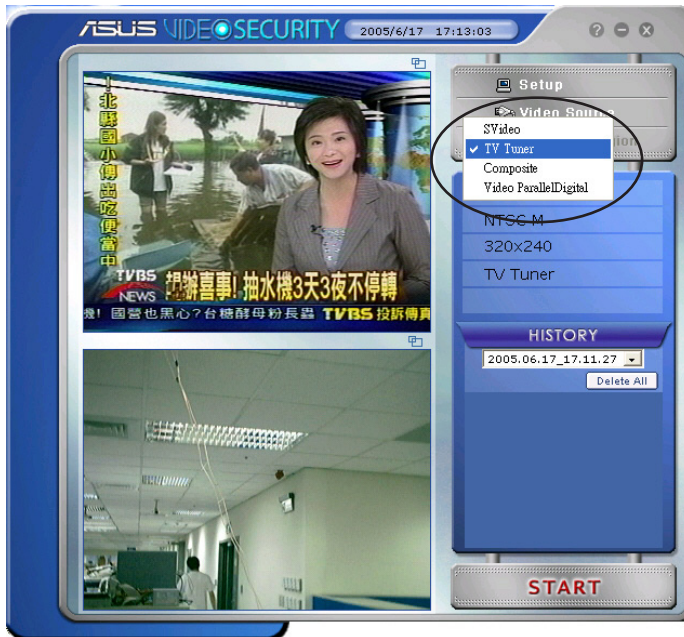
## 4.5 Video Source

The Video Source lists available video devices installed to your system. When available, you can exchange the different video source types.

### Video source setting

To set the video source:

1. Click Video Source from the VideoSecurity main menu.
2. From the pop-up menu, select from the available video sources. The selected video source output is displayed on the upper screen.

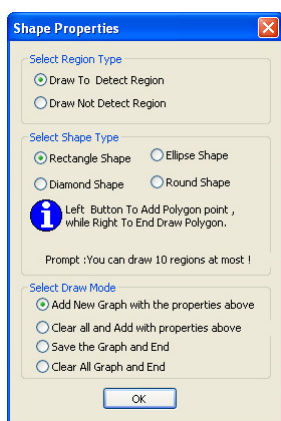




## 4.6 Set detect region

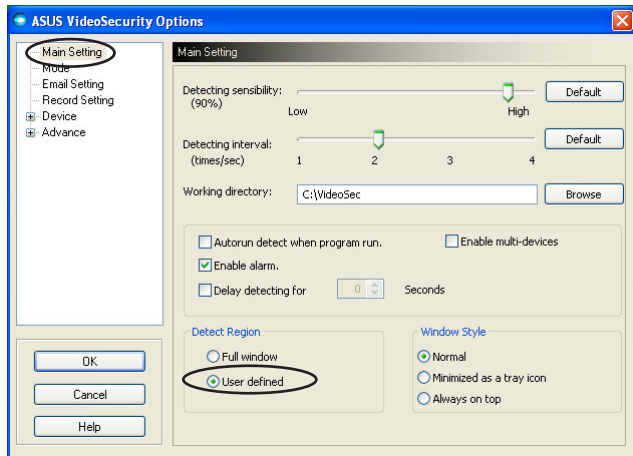
The Detect Region is a user-defined area or areas that VideoSecurity will monitor for condition changes.

To configure the detect region properties, click Set detect region from the VideoSecurity main menu. The following dialog box appears.



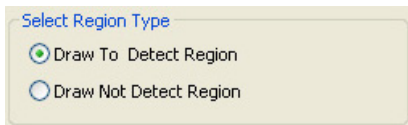
To set detect region:

1. From the Main Setting section, select User Defined of the Detect Region group.

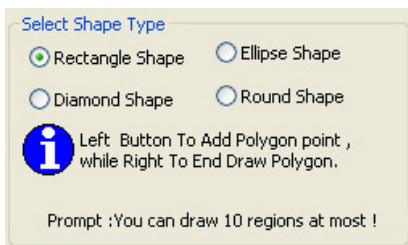




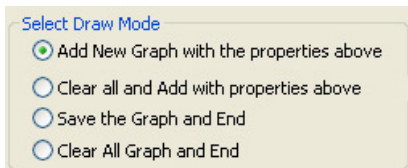
2. Click Set detect region from the VideoSecurity main menu to display Shape Properties dialog box.
3. Click the option buttons to select the region type.



4. Click option buttons to select shape type.



5. Click option buttons to select the draw mode.



6. Click OK to apply settings.
7. Click and drag the mouse on an area to set detect region.







You can set up to a maximum of ten (10) detect regions.

- Click  to begin surveillance.

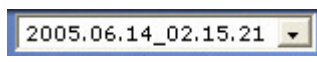
### History


Contains the list of recorded conditions in the detect region. The following labels the history section from the main menu.



- Click to select previously recorded conditions
- Click to delete all history files
- Click to view image or video
- Click to delete condition

- To select other recorded conditions, click the list box labeled with the date and time of recording.



- To delete a recorded condition stored in another folder, select the folder from the list box and click .
- To preview image or video, click  from a listed condition.
- To delete a recorded condition, click .



## 4.7 Limitations

Before using VideoSecurity Online, there are some limitations you have to understand so that you can appropriately use this application.

- While using Webcams or CCDs, the high temperature and luminance sensibility often cause distorted CCDs of the images, which might result in erroneous detection.
- If the features (e.g. color, luminance) of the object are much similar with that of the background, the object might not be detected.
- The Webcams or CCD cannot successfully capture the object if the object moves too fast.
- VideoSecurity Online can only process UYVY, YUY2 and I420 video format.
- Due to the limitation of Video Mixing Renderer in Win2000, VideoSecurity3500 doesn't support User Defined Motion Detection and Tracing features in Win2000.
- VideoSecurity doesn't support 256 color, we suggest that users run the program under 16-bit color environment or above.

### Known Issues

- If you want to connect two USB devices to the system, we recommend that you connect them to USB ports of different USB port modules. Do not use two USB ports in the same USB port module, for example, using port 1 and 2 at the same time.



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