English

Graphics Card

Drivers and Utilities

Installation Guide

English

E4930

First Edition

August 2009

Contents

English

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.

REACH

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at http://green.asus.com/english/REACH.htm.

Macrovision Corporation Product Notice

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only, unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

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.

English

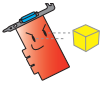
About this guide

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**

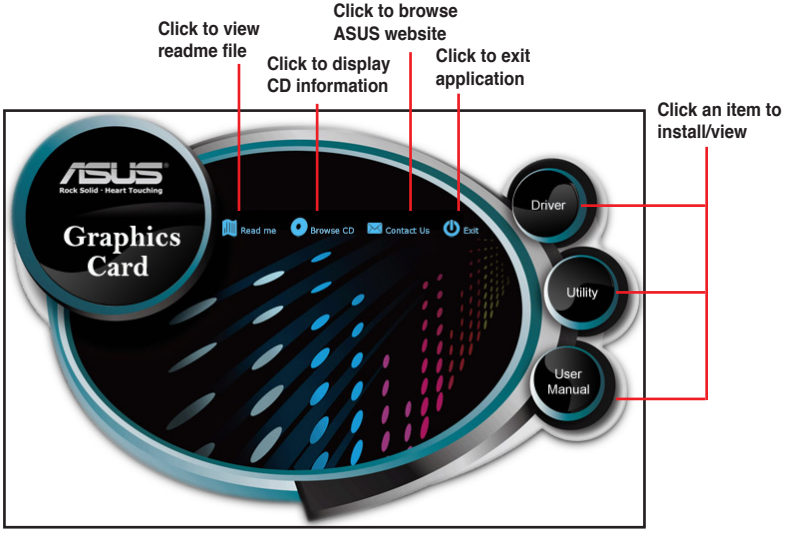
   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

1. Support CD information

The support CD contains the drivers and utilities to be installed on your PC for the VGA card. Click the bars/icons on the support CD's main menu to obtain ASUS contact information, browse the CD contents, or view the ReadMe file.

- The screens in this manual are for reference only and may not exactly match what you see on your screen.
- Some driver and utility items in the support CD apply only to specific ASUS VGA card models.
- You may need administrator rights to install the drivers and utilities. See your Windows®XP documentation for details.
- The contents of the support CD are subject to change at any time without notice. Visit the ASUS website at www.asus.com for updates.

Insert the CD into your computer's optical drive. If Autorun is enabled, the Main Menu launches automatically. If you are using Windows® Vista/7, you may need to click **Run setup.exe** bar from the Autoplay screen to proceed to the main menu.



If Autorun is NOT enabled in your computer, browse the contents of the support CD to locate the file **SETUP.EXE**. Double-click the **SETUP.EXE** to run the support CD installation program.

2. VGA drivers

A VGA driver is the software program that makes the device work with your operating system. After physically installing your graphics card, use any of the recommended methods in this section to install, update, or remove the VGA driver.

If you are replacing an old graphics card with a new ASUS graphics card, ensure to remove the old display driver from your system.

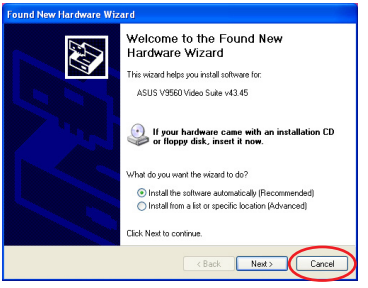
2.1 Installing the VGA driver

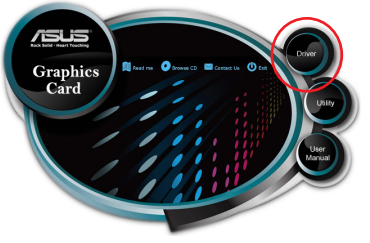
2.1.1 Installing under Windows® XP

To install the VGA driver under Windows® XP:

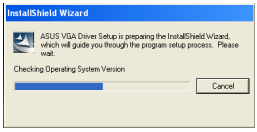
1. From the Found New Hardware Wizard dialog box, click **Cancel** to enter the Windows desktop.
2. Insert the support CD into your optical drive.
3. If Autorun is enabled, the main menu appears automatically.

   If Autorun is disabled, run **Setup.exe** from the root directory of your support CD.
4. From the main menu, click **Drivers**.



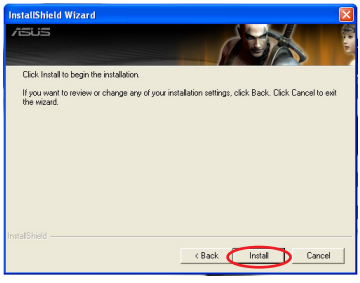


The InstallShield Wizard launches to guide you through the program setup process.

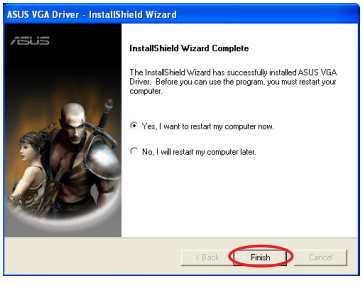


5. Click **Next** from the Install Shield Wizard screen.

6. Click **Install** to install the drivers.



7. After the installation is completed, select **Yes, I want to restart my computer now**, then click **Finish**.



2.1.2 Installing under Windows® Vista and Windows® 7 (32/64 bit)

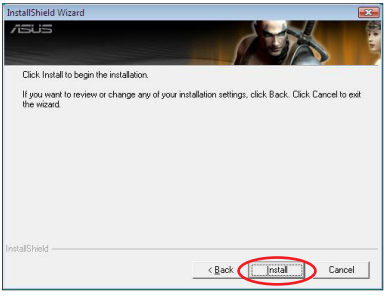
To install the VGA driver under Windows® Vista and Windows® 7:

1. Insert the support CD into your optical drive.
2. If Autorun is enabled, the main menu appears automatically.

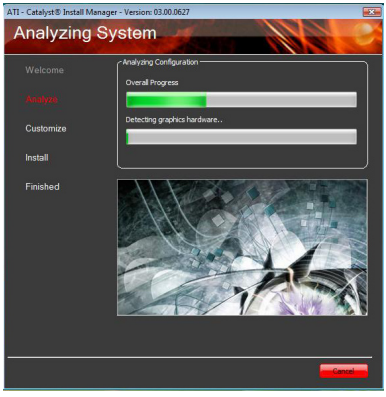
   If Autorun is disabled, run **Setup.exe** from the root directory of your support CD.
3. From the main menu, click **Drivers**.

The InstallShield Wizard launches to guide you through the program setup process.

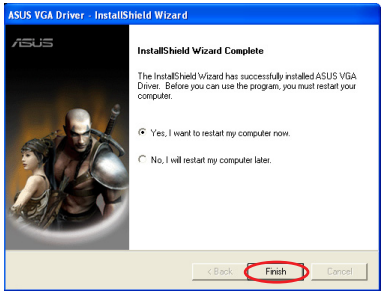
4. Click **Install** from the Welcome screen.

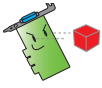


The installation process begins.



5. After the installation is finished, a screen prompts you to reboot your computer. Choose **Yes** to reboot your computer or **No** to reboot your computer later.





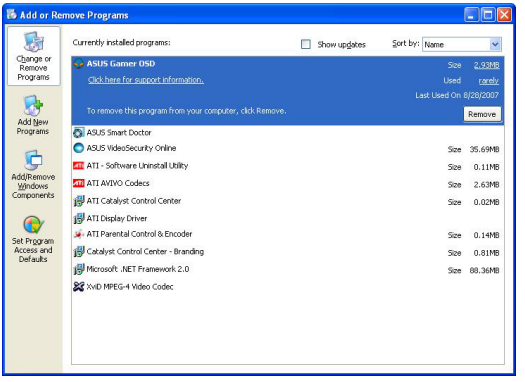
View the detailed information of the graphics from the Catalyst Control Center.

2.2 Removing drivers

2.2.1 Removing Windows® XP

To remove the VGA driver under Windows® XP:

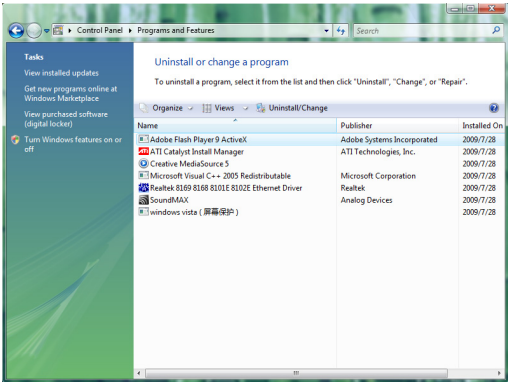
- Click **Start > Control Panel > Add or Remove Programs**, select the item you want to remove. When done, click **Remove**.



2.2.2 Removing Windows® Vista

To remove the VGA driver under Windows® Vista:

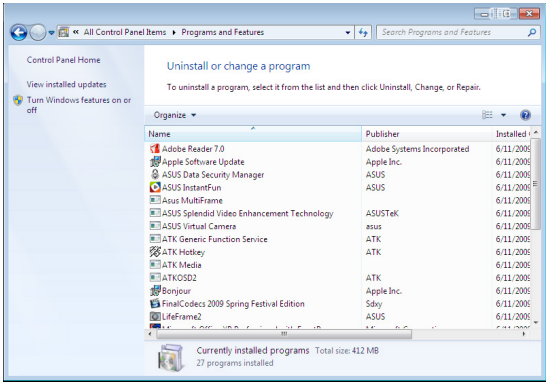
- Click **Start > Control Panel > Programs and Features**, select the item you want to remove. When done, click **Uninstall**.



2.2.3 Removing under Windows® 7

To remove the VGA driver under Windows® 7:

- Click **Start > Control Panel > Programs and Features**, select the item you want to remove. When done, click **Uninstall**.



3. Utilities

Your graphics card package comes with innovative technologies to turn your computer into a smart multimedia center. After installing the VGA drivers for your graphics card, use any of the recommended methods in this section to install or remove the utilities:

A. ASUS SmartDoctor

The Smart Doctor utility monitors the VGA card condition and significantly cools down the VGA Graphics Processing Unit (GPU). This utility also allows you to adjust the graphics card clock settings.

- The ASUS Smart Doctor utility works only for graphics card models with a built-in hardware monitor IC. If the hardware monitor IC is not present, only the SmartDoctor overclocking function will be installed.
- The Smart Doctor utility is not supported in the Radeon 9600SE and Radeon 9200SE graphics card models.
- Before using SmartDoctor, you need to install the GamerOSD first.

B. ASUS GamerOSD

ASUS GamerOSD allows you to share real-time gaming experience while playing full-screen games. You 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. It also enables support for Direct3D™ and OpenGL™ modes.

3.1 Installing the utilities

3.1.1 Installing under Windows® XP

To install the utilities under Windows® XP:

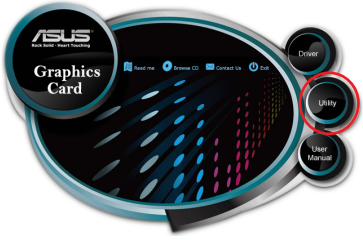
Method 1: Complete installation

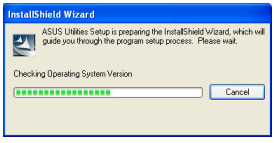
The Complete installation method installs all the available program features. We recommend this method to most users.

1. Insert the support CD into your optical drive.
2. If Autorun is enabled, the main menu appears automatically.

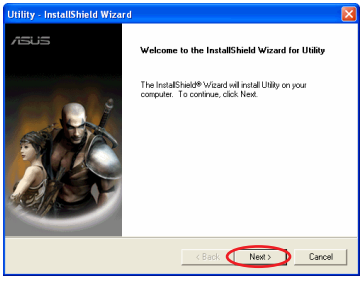
   If Autorun is disabled, run **Setup.exe** from the root directory of your support CD.
3. From the main menu, click **Utility**.

   The Install Shield Wizard launches to guide you through the program setup process.

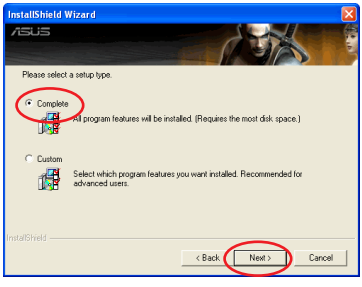




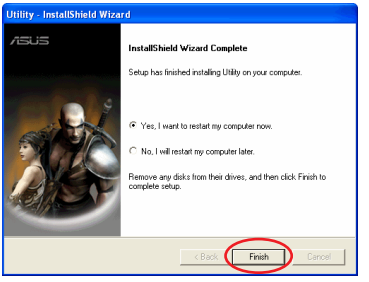
4. Click **Next** from the Install ShieldWizard welcome screen to continue.



5. Select **Complete** then click **Next**.



6. After the installation is completed, click **Finish**.



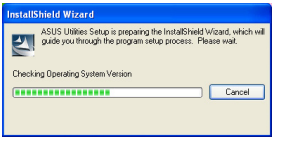
Method 2: Custom installation

The Custom installation method allows you to select the features you want to install. We recommend this method to advanced users.

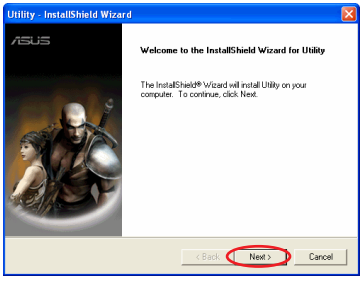
1. Insert the support CD into your optical drive.
2. If Autorun is enabled, the main menu appears automatically.

   If Autorun is disabled, run **Setup.exe** from the root directory of your support CD.
3. From the main menu, click **Utility**.

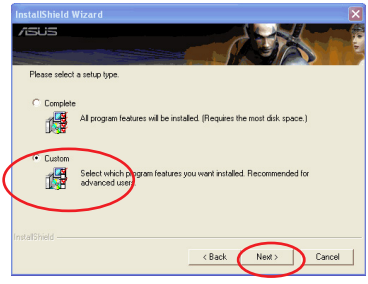
   The InstallShield Wizard launches to guide you through the program setup process.



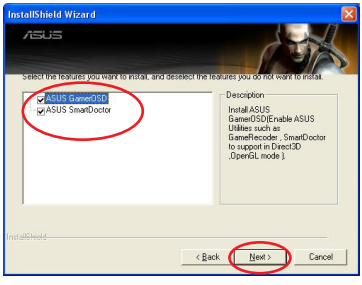
4. Click **Next** from the Install Shield Wizard welcome screen.



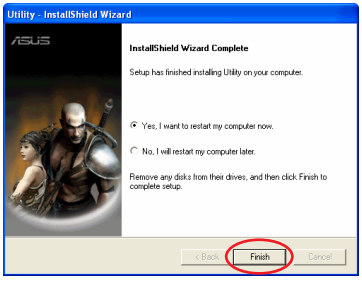
5. Select **Custom** then click **Next**.



6. Select the items that you want to install then click **Next**.



7. After the installation is completed, click **Finish**.



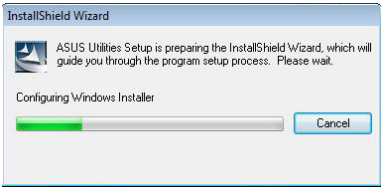
3.1.2 Installing under Windows® Vista and Windows® 7 (32/64 bit)

To install the utilities under Windows® Vista and Windwos® 7:

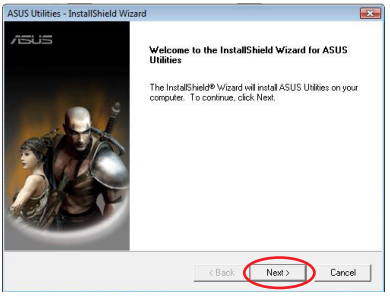
1. Insert the support CD into your optical drive.
2. If Autorun is enabled, the main menu appears automatically.

   If Autorun is disabled, run **Setup.exe** from the root directory of your support CD.
3. From the main menu, click **utility**.

The InstallShield Wizard launches to guide you through the program setup process.

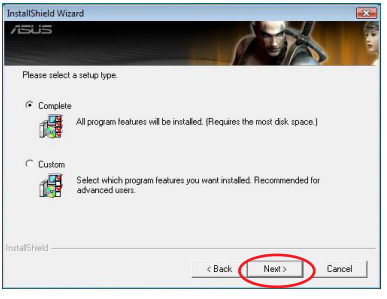


4. Click **Next** from the Welcome screen.

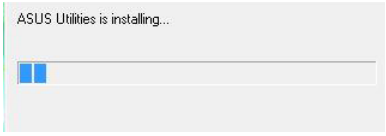


5. Select the installation type, then click **Next**.

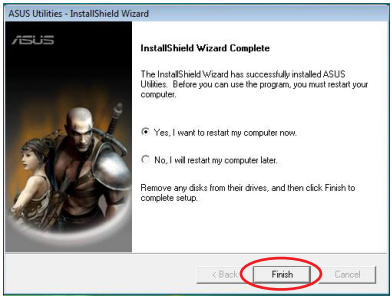
If you want to select the features to install, tick **Custom**, select the features, then click **Next**.



The installation process begins.



6. Choose **Yes, I want to restart my computer now** to restart your computer or choose **No, I will restart my computer later**, then click **Finish** to complete the installation process.

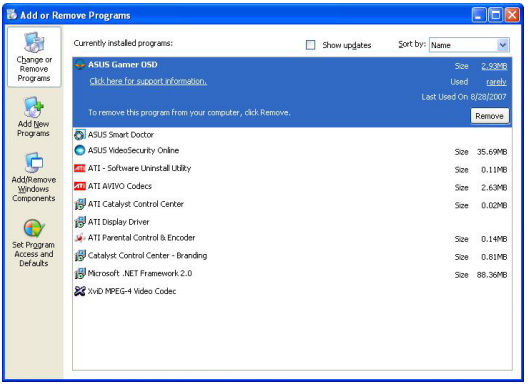


3.2 Removing utilities

3.2.1 Removing under Windows® XP

To remove the utilities under Windows® XP:

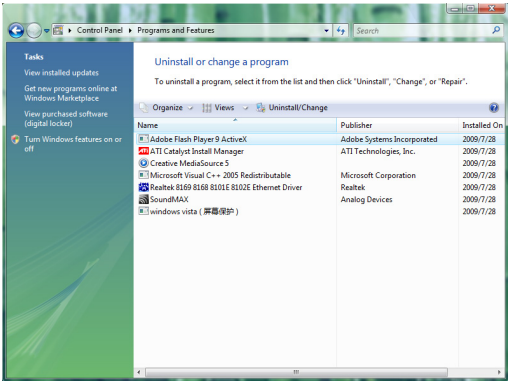
- Click **Start > Control Panel > Add or Remove Programs**, select the item you want to remove. When done, click **Remove**.



3.2.2 Removing under Windows® Vista

To remove the utilities under Windows® Vista:

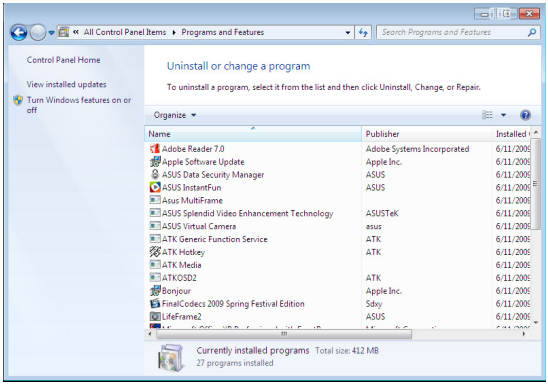
- Click **Start > Control Panel > Programs and Features**, select the item you want to remove. When done, click **Uninstall**.



3.2.3 Removing under Windows® 7

To remove the utilities under Windows® 7:

- Click **Start > Control Panel > Programs and Features**, select the item you want to remove. When done, click **Uninstall**.



4. Other information

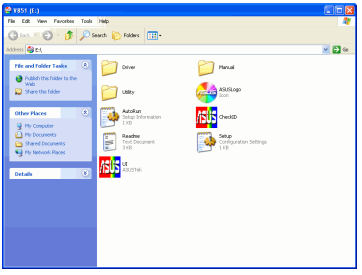
4.1 Browsing the Support CD

To browse the support CD:

1. Insert the support CD into your optical drive.
2. If Autorun is enabled, the main menu appears automatically.

   If Autorun is disabled, run **Setup.exe** from the root directory of your support CD.
3. From the main menu, click **Browse CD**.

The setup displays the following window.



4.1.2 Contact Information

1. Insert the support CD into your optical drive.
2. If Autorun is enabled, the main menu appears automatically.

   If Autorun is disabled, run **Setup.exe** from the root directory of your support CD.
3. From the main menu, click **Contact Us** to go ASUS website to go to the ASUS website and view more contact information.

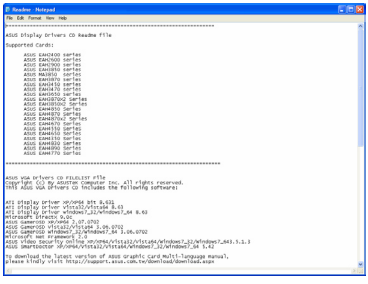
4.1.3 Viewing the readme file

To view the readme file:

1. Insert the support CD into your optical drive.
2. If Autorun is enabled, the main menu appears automatically.

   If Autorun is disabled, run **Setup.exe** from the root directory of your support CD.
3. From the main menu, click **Read Me**.

   The setup displays the following window.



5. Software Reference

Install the VGA driver from the support CD. If you obtained the VGA driver from the ASUS Support website at http:// support.asus.com/download.aspx, ensure that you install GamerOSD after the VGA driver installation. Otherwise, you will not be able to use the ASUS Slendid feature.

5.1 ASUS Splendid

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.

- The ASUS Splendid Video Enhancement technology works only when the video device has the overlay surface feature.
- ASUS Splendid supports these video pixel formats: YUY2, UYVY, YV12, YVU9, and NV12.
- The maximum video resolution that ASUS Splendid supports is 1280 x 720 in PCI-E system and 720 x 480 in AGP system.
- ASUS Splendid does not support the QuickTime player.

5.1.1 System Requirements

- For PCI-Express system with PCI-Express graphics card installed:

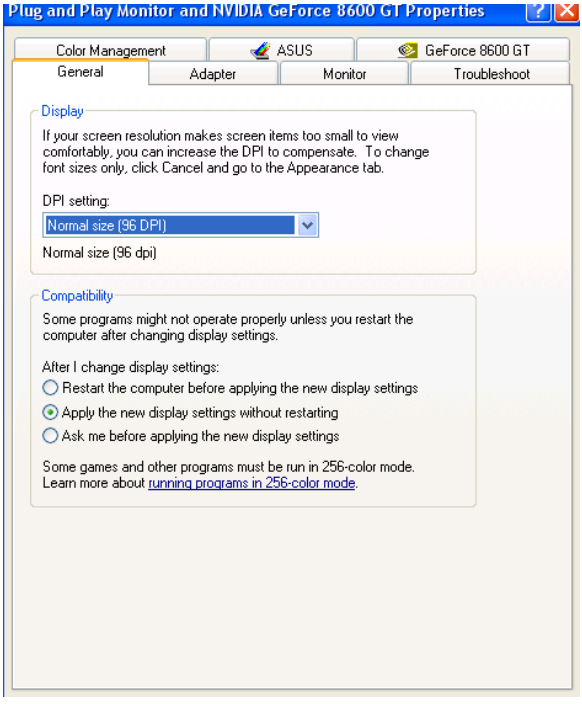
  Intel Pentium 4 2.8GHz processor or equivalent AMD processor or higher
- For AGP system with AGP graphics card installed:

  Intel Pentium 4 2.4GHz processor or equivalent AMD processor or higher
- 256MB system memory or above
- Windows® 2000 Professional Edition with SP4 or Windows® XP Professional/ Home Edition with SP2 / Windows® Vista / Windows®
- DirectX 9.0 or higher
- After installing the latest NVIDIA series or ATI series display driver, install the ASUS Enhanced Display Driver version 1.16 or later.
- An LCD or CRT monitor with 60 Hz refresh rate.

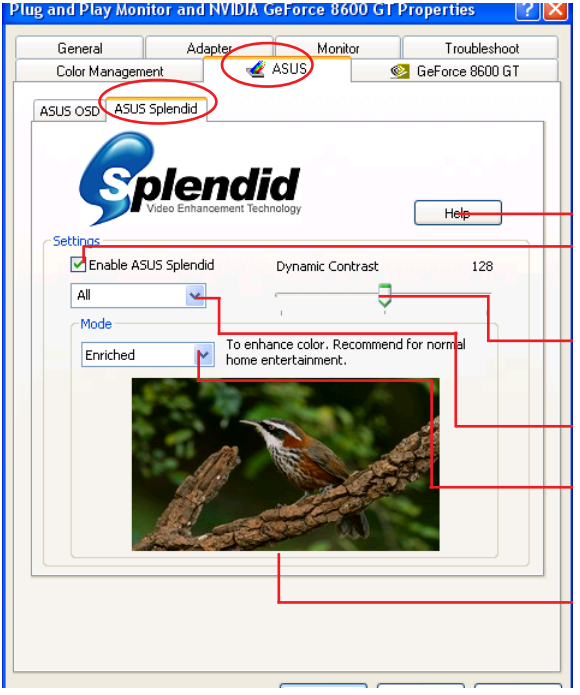
5.1.2 Launching ASUS Splendid

To launch ASUS Splendid:

1. Click **Start** > **Control Panel** > **Display**. From the Display Properties dialog box, select the **Settings** tab then click **Advanced**. The following window appears.



2. Select **ASUS** tab > **ASUS Splendid** to launch the ASUS Splendid screen.



* Dynamic Contrast: With Dynamic Contrast, ASUS Splendid intelligently adjust the contrast of the objects based on the background without losing the detail.

** Set Region: **You can select All**, **Left only**, and **Right only** to set the region of your display.

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 apply the changes.

5.2 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 the games.

5.2.1 System Requirements

- Intel® Pentium™ III CPU or higher
- ASUS graphic card

If you are using a non-ASUS graphics card, you can use ASUS GamerOSD for 30 days only.

- At least 60MB free space
- 256MB system memory or more
- DirectX 9.0a or higher
- Windows® 2000 SP4, XP SP2, Vista, 7

5.2.2 Enabling ASUS GamerOSD

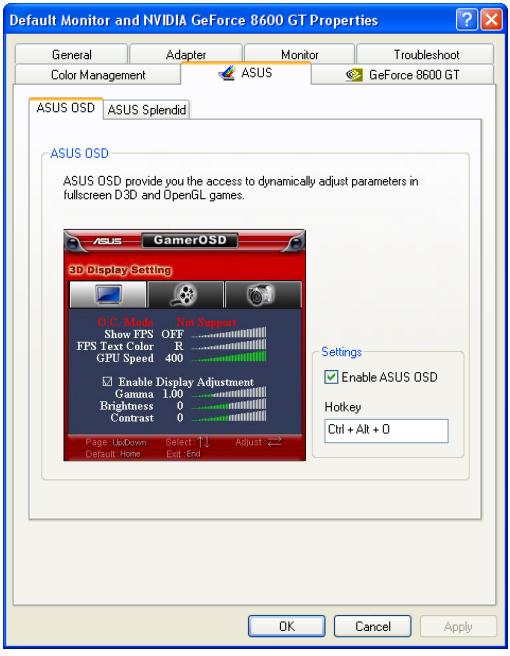
Install the VGA driver and the ASUS GamerOAD utility from the support DVD.

For more details on installing the utilities of your ASUS graphics card, refer to the section **3.1 Installing the utilities**.

After installing the ASUS GamerOSD, you must enable this utility before you can start using it.

To launch ASUS GamerOSD:

1. Right-click anywhere on your Windows® desktop and select **Properties**.
2. From the Display Properties dialog box, select the Settings tab, then select **Advanced**.
3. Select the ASUS tab, then select the ASUS OSD tab.
4. Tick Enabled ASUS OSD.
5. On the Hotkey field, enter the keys that you want to use to launch ASUS GamerOSD.
6. Click **OK** or **Apply** to save the settings. Click Cancel if you want to disregard the settings made.



5.2.3 Use ASUS GamerOSD

ASUS GamerOSD has three functions: **3D Display Setting**, **Video Capturing**, and **Screenshots**.

3D Display Setting

O. C. Mode

When ASUS GamerOSD controls the current overclocking function, this item shows Manual. If the HyperDrive feature in ASUS SmartDoctor is enabled, this item shows **HyperDrive** to indicate that ASUS SmartDoctor controls the overclocking function.

Show FPS

Allows you to show or hide the FPS and choose where to display it on your monitor 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. You can configure the follow three items when you enable the display adjustment.

Gamma

Adjusts the current Gamma value of the game.

Brightness

Adjusts the current brightness of the game.

Contrast

Adjusts the current contrast of the game.

Video Capturing

Capture Mode

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

Screenshots

Screenshot Mode

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

File Format

Allows you to select the image file 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.

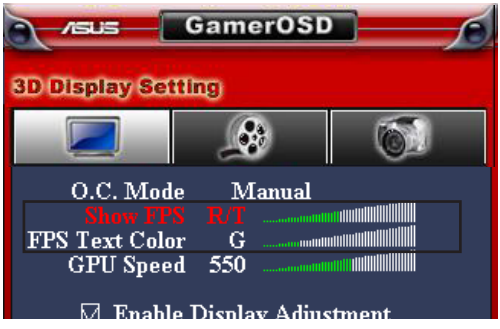
Hot Key
Shows the hotkeys for capturing screens. Press the set hotkeys to capture screens. The images are automatically saved to the ScreenShot folder and named by date.

5.2.4 Using GamerOSD

Setting up the 3D Display function:

To set up the 3D Display function:

1. Start a full-screen DirectX or OpenGL game.
2. Press the hotkey to launch ASUS GamerOSD. The default hotkey is <Cttrl> + <Alt> + <O>.
3. Select **Show FPS** from the 3D Display Setting.
4. Select any of these locations to display the FPS on the screen L/T (Left/Top), R/T (Right/Top), L/B (Left/Bottom) and R/B (Right/bottom).
5. Select any of these these text colors for the FPS: R (Red), G (Green), B (Blue) and Y (Yellow).



To overclock while playing games:

1. Start a full-screen DirectX or OpenGL game.
2. Press the hotkey to launch ASUS GamerOSD. The defaullt hotkey is <Ctrl> + <Alt> + <O>.
3. Select GPU Speed from the 3D Display Setting.
4. Press 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.

Capturing your games on video

To capture your games on vidwo:

1. Start a full-screen DirectX or OpenGL game.
2. Press the hotkey to launch ASUS GamerOSD. The default hotkey is <Ctrl> + <Alt> + <O>.
3. Press the Left/Right keys on your keyboard to adjust the Capture Size and Capture Rate. The available Capture Sizes are 320x240, 640x480 and 720x480, the available Capture Rates are 10, 15, 20, 25 and 30 fps.

4. Use the hot keys or select **Start Capturing** to start recording.
5. The default video format is WMA. To change the video format, follow these steps:

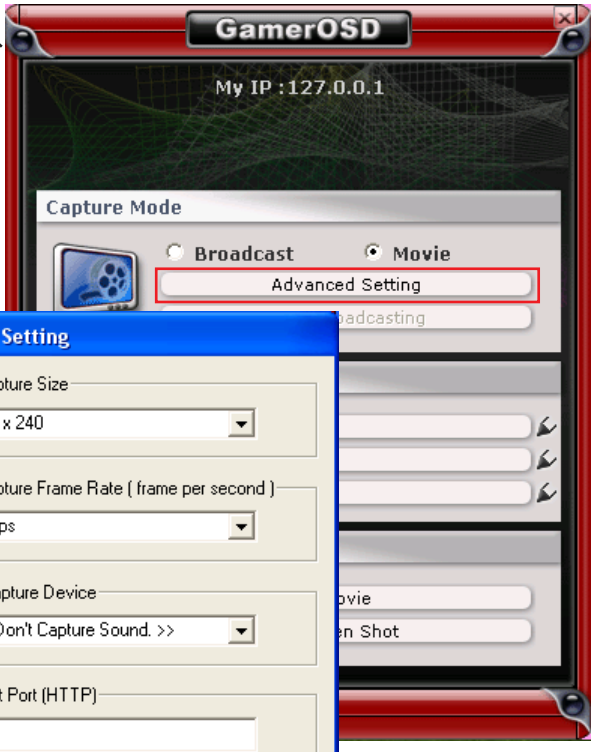
a. On the Windows® taskbar, click the ASUS GamerOSD icon.

b. On the Capture Mode screen, click Advanced Setting.

c. On the Advanced Setting screen, select **WMA** or **XvID MPEG-4** as the Movie Format.

figure 1

figure 2



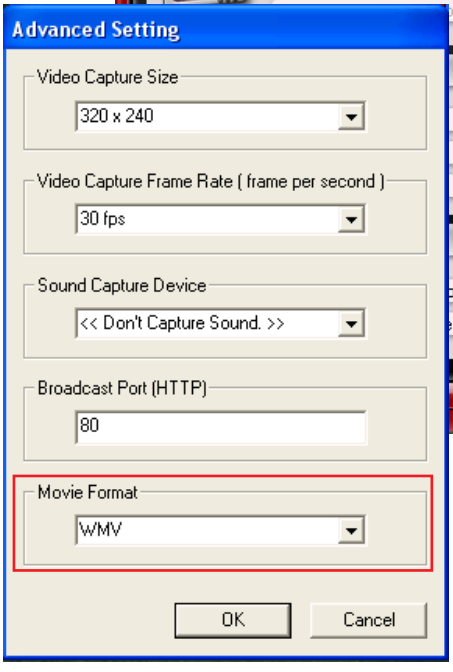
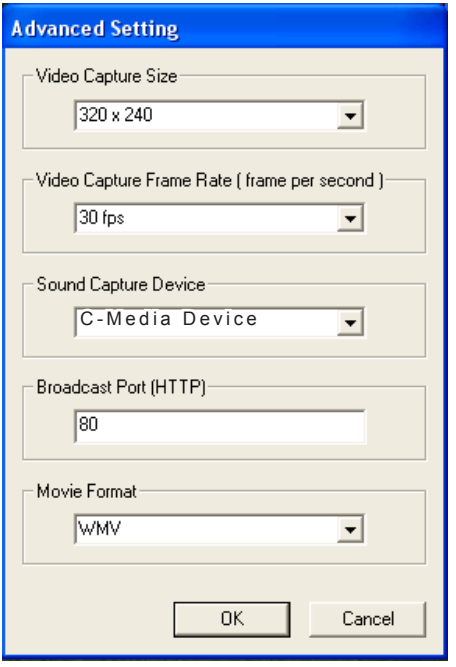


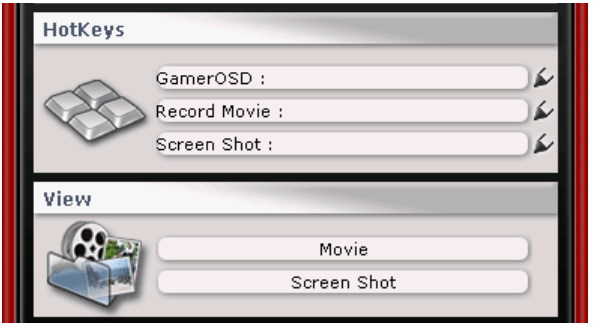
figure 3

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



7. 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.

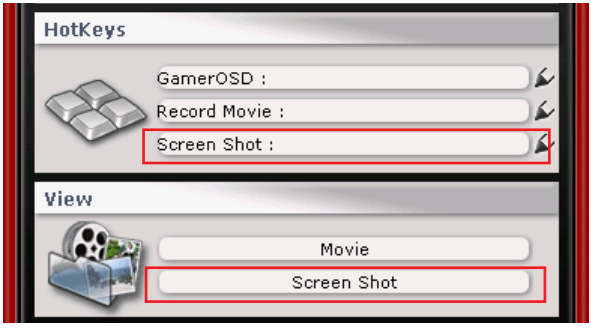


Setting up the Screenshots function

To set up the Screenshots function:

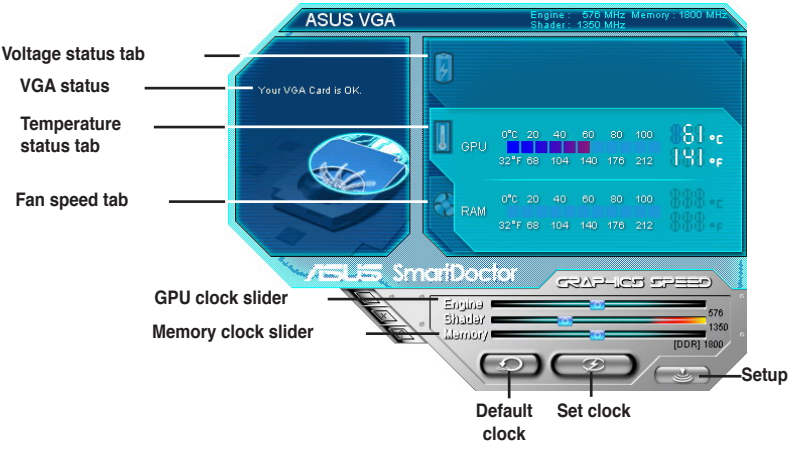
1. Start a full-screen DirectX or OpenGL game.
2. Press the hotkey to launch ASUS GamerOSD. The dafault hotkey is <Ctrl> + <Alt> + <O>.
3. Select the Screenshot Mode, File Format, Capture Numbers, and Capture Interval.

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



5.3 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 overclocking and fan control functions only. For graphics cards without a monitor IC, ASUS SmartDoctor provides the overclocking function only

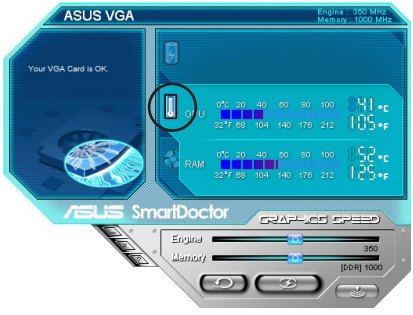
5.3.1 Voltage status

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.

5.3.2 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.

5.3.3 Fan speed status

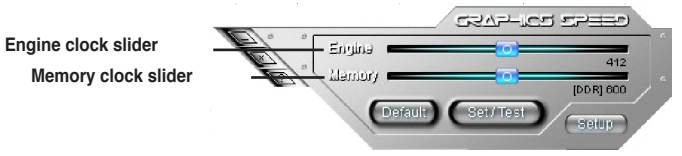
Click the Fan speed tab to display the current fan speed of your graphics card.

5.3.4 Adjusting the engine and memory clock settings

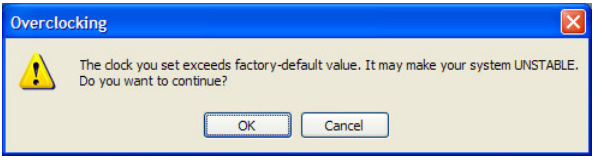
You can manually adjust the graphics card engine (GPU) and memory clock to enhance your graphics card performance.

To adjust the engine and memory clock settings:

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

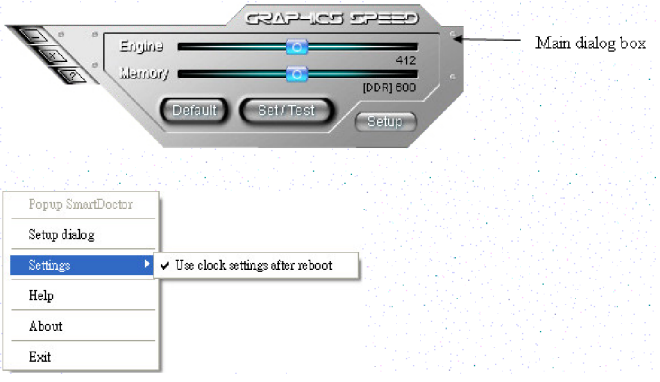


3. Click **Set/Test**.
4. Click **OK** on the confirmation message.



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.



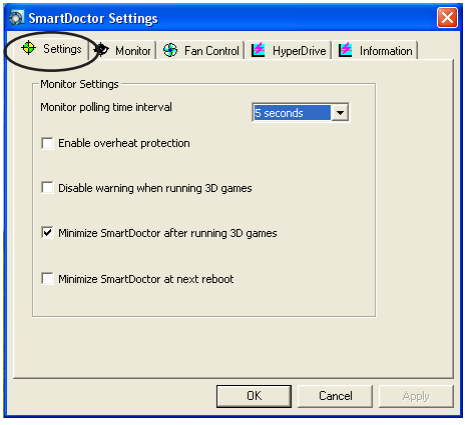
- The overclocking function does not work with the A9200SE/LE and A9600SE graphics cards.
- ASUS do not provide any warranty or support for any damage caused by improper use of this utility. Use this feature carefully. Before using this feature, carefully read the instructions.

5.3.5 Advanced setup features

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

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.

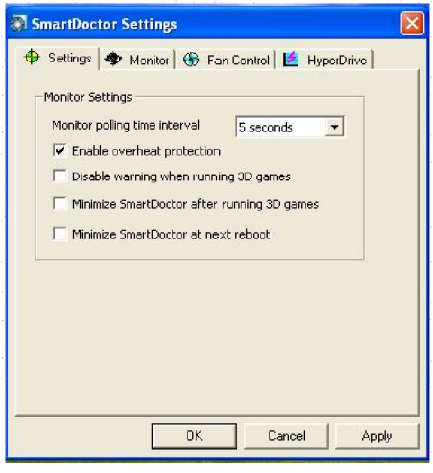
Monitor polling time interval

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.

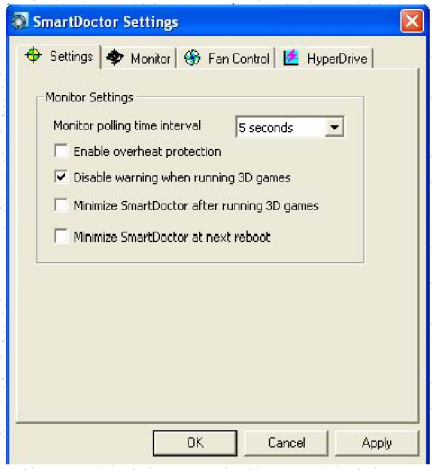
Click the check box to enable or disable overheat protection feature.



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**.

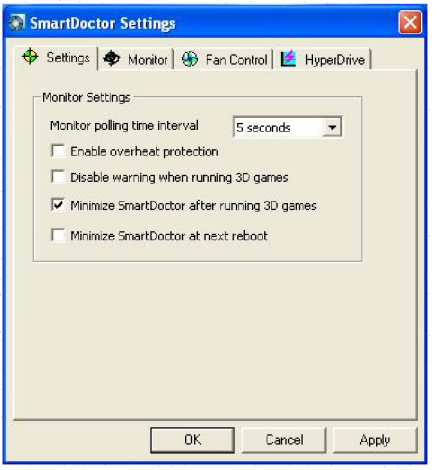


The **Disable warning when running 3D games** option is only available when the ASUS enhanced driver is installed in your system.

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.

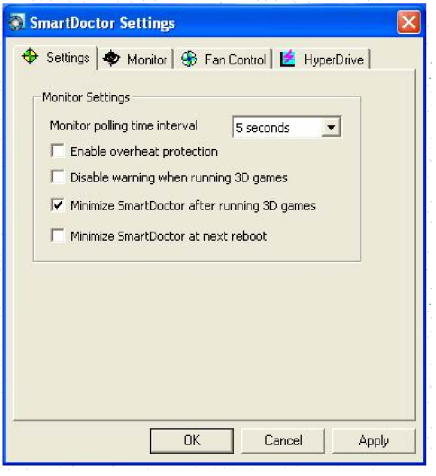


The **Minimize SmartDoctor after running 3D games** option is only available when the ASUS enhanced driver is installed in your system.

Minimize SmartDoctor at next reboot

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

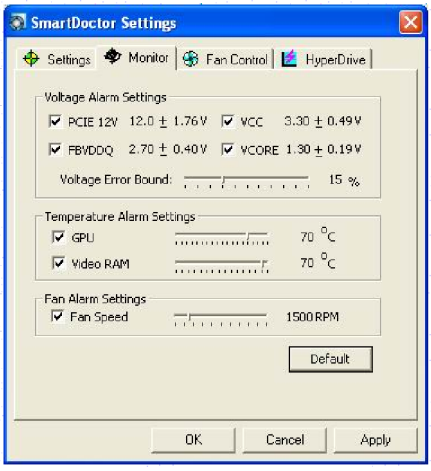
Click the checkbox to enable or disable **Minimize SmartDoctor at next reboot** feature.



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.

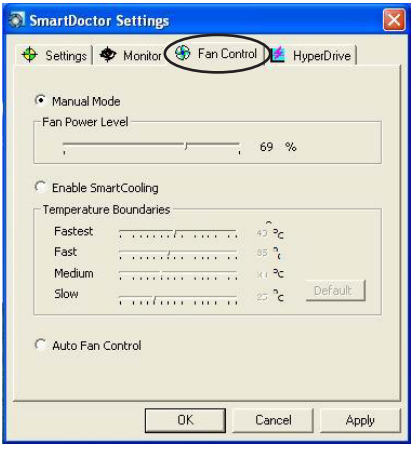
2. Click **Apply** to apply settings or click **OK** to save settings and exit. Click **Cancel** to discard changes and exit.

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

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 40 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.

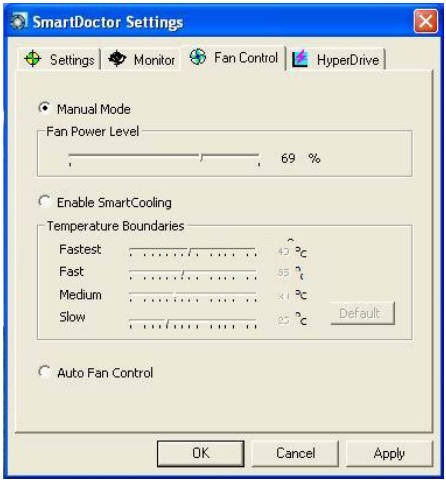
   Auto Fan Control - SmartDoctor automatically adjusts the fan speeds for optimum performance.

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

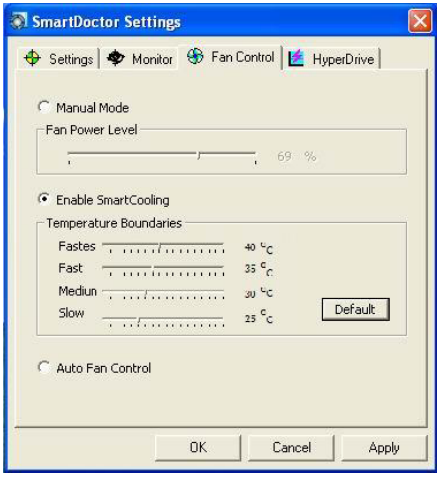
In manual mode, you can set the fan speed at a fixed rate. Using the fan power level slider to adjust the fan speed. Setting the power level to 100% means that the fan will run at full speed, while 0% will stop the fan.



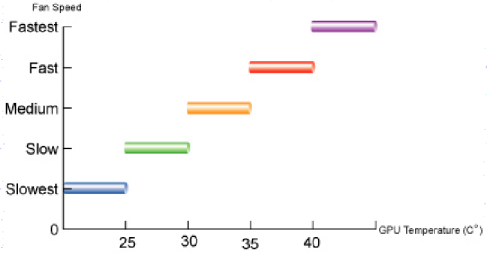
Only V9180 series or newer models support this feature. .

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.



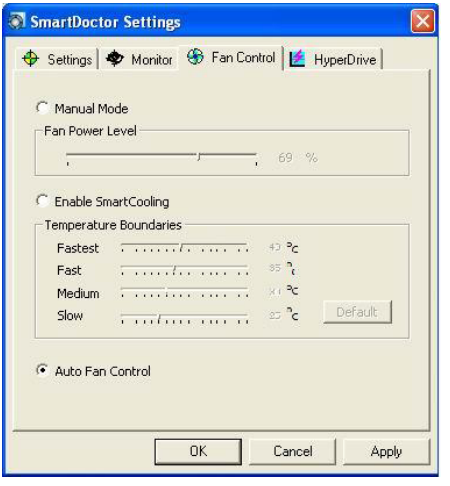
There are five fan speed levels and four temperature boundaries (see the figure below). When the GPU temperature goes beyond 40 degrees Celsius, ASUS SmartCooling will cool down the GPU with the full fan speed (Fastest level). When the temperature falls between 40 and 35 degrees Celsius, the fan speed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



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

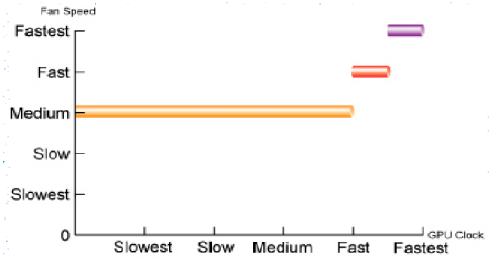
Auto Fan Control

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.



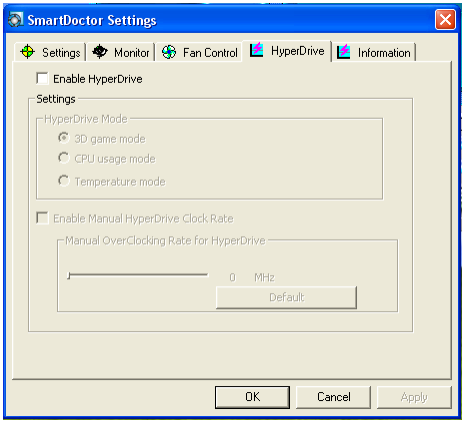
HyperDrive

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:

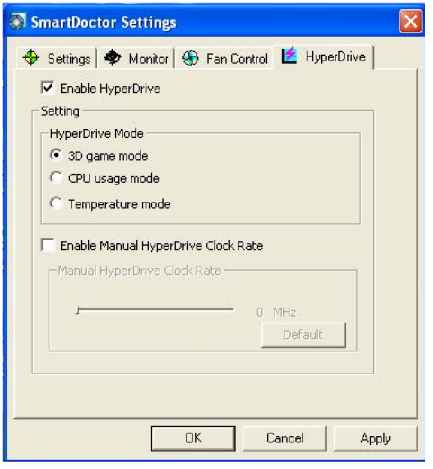
1. Click the **HyperDrive** tab from the SmartDoctor Settings dialog box.



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.



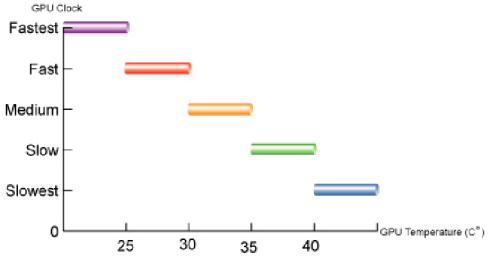
This page just only shows in version 4.54 and later.

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.

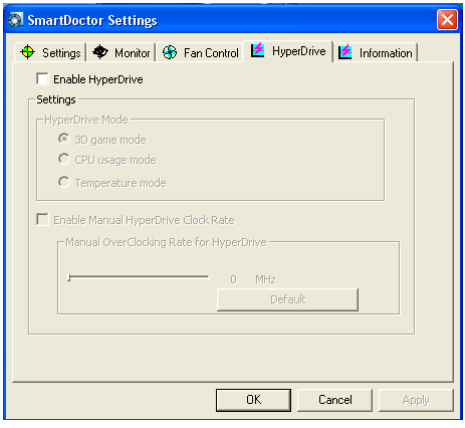
C. GPU Temperature mode - In Temperature mode, ASUS SmartDoctor smartly adjusts the GPU clock according to its temperature. If the GPU temperature increases, ASUS SmartDoctor automatically decreases the GPU core clock, and vice versa.



GPU temperature mode

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.



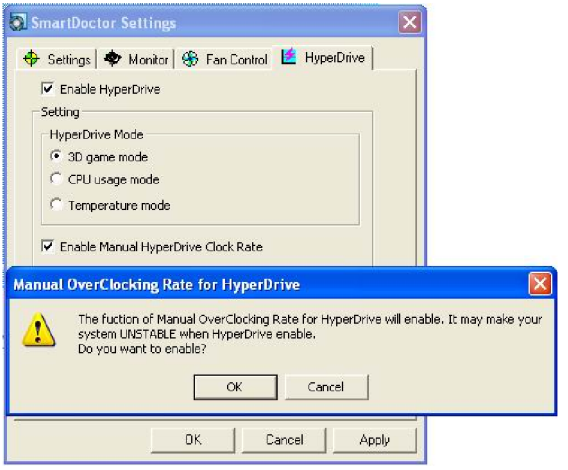
5. Click **Apply** to apply settings or click **OK** to save settings and exit. Click Cancel discard changes and exit.

Manual Overclocking rate for HyperDrive

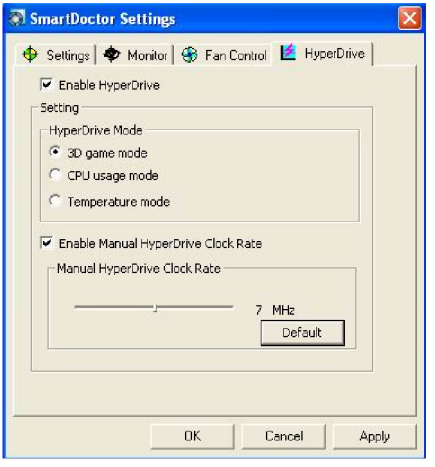
Follow the steps below to set the engine Overclocking rate for HyperDrive:

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.

5.3.6 Abnormal Events

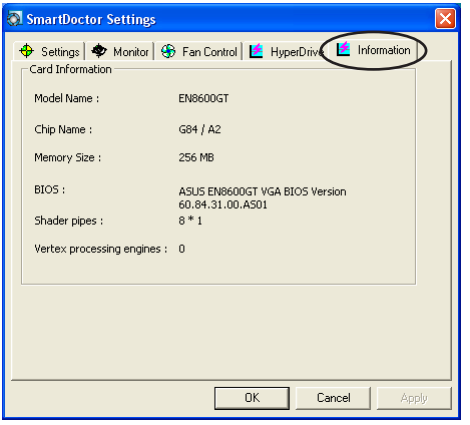
There are three type of abnormal events : unstable voltages, temperature overheat, and fan malfunction. When ASUS SmartDoctor detects an abnormal event, it will display a warning message on the upper-left side of the dialog box.

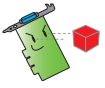
If you want ASUS SmartDoctor to inform you of abnormal events, enable the alarm settings in the monitor page.

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

5.3.7 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.

5.3.8 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.

Appendix: Basic troubleshooting

If you encounter any of the following conditions after installing your graphics card, try performing one of the possible solutions before calling for technical support.

Problem	No display after the card is installed.
Cause	Your card might not be properly installed.
Solution	Make sure that the card is not tilted or skewed on the slot.
Cause	Your monitor might not be properly connected.
Solution	Make sure that the signal cable is properly connected to your monitor and graphics card.
Cause	Your graphics card is not supported by your motherboard.
Solution	Check the technical documentation that came with your motherboard and check the required specifications for your graphics card (e.g., AGP voltage requirement).
Cause	The graphics card auxiliary power is not connected.
Solution	Make sure that the auxiliary power cables are properly connected with the power supply unit.
Cause	Insufficient power supply.
Solution	Make sure that your power supply unit can provide the minimum power requirement to your system.
Cause	Incorrect motherboard hardware system settings (e.g., system control panel connections).
Solutions	• Make sure that the system control panel cables are connected properly (e.g., Power Switch, Reset). • Make sure that your CPU, CPU fan and/or memory DIMMs are in good working condition and are connected properly.

Problem	Wrong color balance
Cause	Your card might not be properly installed.
Solution	Make sure that the card is not tilted or skewed on the slot.
Cause	Your video controls might not be properly set.
Solutions	• Manually configure your video controls to your desired settings. • Configure your graphics card display resolution in Display Properties.
Cause	There may be unsupported graphics card drivers installed in your system. Conflicts may occur with graphics card drivers from different vendors.
Solutions	• Remove any unused graphics card drivers installed in your system. • Install the graphics card driver from the support CD that came with your graphics card package.
Cause	The graphics card auxiliary power is not connected.
Solution	Make sure that the auxiliary power cables are properly connected with the power supply unit.
Cause	If your monitor comes with BNC connectors, the port connections might be incorrect.
Solution	Make sure that all BNC connectors are connected properly to its port.
Cause	Your monitor software settings might be incorrect.
Solution	Configure your monitor software to your desired settings.
Cause	Your monitor might not be properly connected.
Solution	Make sure that the signal cable is properly connected to your monitor and graphics card.

Problem	The screen image is garbled.
Cause	Your monitor cannot support desired display settings.
Solution	Make sure that your monitor can support your desired display settings. See the technical documentation that came with your monitor.
Cause	Your graphics card cannot support desired system settings.
Solution	Make sure that your graphics card can support your desired display settings. See the specifications table that came with this graphics card package.
Cause	Some graphics driver files might be corrupted.
Solution	Remove your current graphics drivers and reinstall the graphics drivers from the support CD.
Cause	Poor heat dissipation inside the chassis.
Solutions	Make sure that the chassis fan, CPU and heatsink with fan, and/or the graphics card GPU fan are working properly.
Cause	GPU or VGA memory overclocked too much.
Solution	Solutions: restore default frequency settings of GPU and VGA memory

Other problems that you might encounter can be related to other parts or accessories (e.g., motherboard, power supply unit, LCD/CRT) of your system.