S/U/M/A/ Geforce3

GRAPHICS CARD

USER'S MANUAL

MANUAL REVISION : SGM3.01F02

RELEASE DATE : JUNE, 2001

USER'S NOTICE

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3. Federal Communications Commission (F.C.C) Statement

This device complies with the 47 CFR, Part 2 and Part15 of FCC Requirement. Operation of this device is subject to the following two conditions ;

this device may not cause harmful interference

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 limit s 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 to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause 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 followings;

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Plug the computer into a different outlet so that the two devices are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio / television technician for additional suggestions.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

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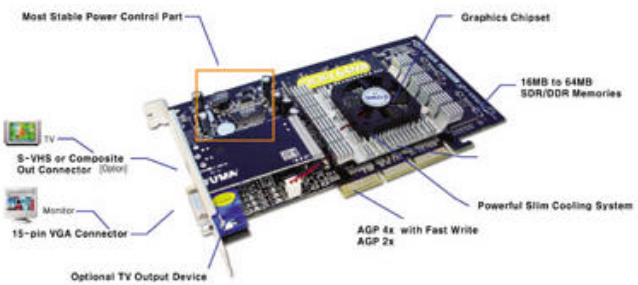
. Introduction

Thank you for buying a SUMA PLATINUM graphics card.

SUMA PLATINUM graphics card offers the excellent features and great performance to person looking to upgrade his or her system at a good price. SUMA PLATINUM graphics card will provide bleeding-edge graphics technology for your PC or workstation.

SUMA PLATINUM Graphics card is the best solution for a cost-effective VGA up-grade !

-1. Layout



This picture is the picture of SUMA PLATINUM GeForce2 Pro 64MB DDR. The product which you purchase can be different from this picture.

Graphics Chipset

: Equipment of many performance related features that are available in the

graphics chipset with cooling equipments for stability.

Enough Memories for Multi-Texturing

: SUMA PLATINUM cards have from 16MB to 128MB of SDR or DDR memories depending on the chipset.

AGP 2x / 4x

: Every video cards are optimized for AGP 4x with Fast Write. However you can enjoy high performance graphics acceleration with AGP 2x.

15-pin VGA Connector

: This is the connector to connect your monitor(CRT) cable. If you would like to clear graphics, you would better use D-SUB to BNC cable.

Composite / S-VHS Out Connector (Option)

: With this option you can enjoy the graphics on larger TV. It can support both of NTSC and PAL mode at up to 800 X 600 resolution.

Secondary D-Sub Output Device (Option only in case of MX based card)

: With this option you can enjoy the graphics on two monitors. TwinView can support both of individually same display on two monitors and individually different display on two monitors.

-2. OS and Driver Support

- Windows 95 OSR 2.1(or above version)

- Windows 98 SE/ME
- Windows NT
- Windows 2000
- Linux, OS2 display drivers
- DirectDraw, Direct3D, DirectVideo, ActiveX
- OpenGL ICD for Full OpenGL
- Fully PC00, PC99 and PC99a compliant

-3. Hardware Requirements

- CPU : Pentium II 233MHz or higher

  (Pentium III or AMD K7 recommended)
- Memory : 64MB (128MB or more recommended)
- Mother Board : AGP 2x / 4x slot
- Monitor : 15" 75MHz (17" or larger recommended)
- Power Supply : at least 250W of real power-out
- CDROM or DVDROM available

. Hardware Installation

Before beginning

Static electricity can severely damage electronic parts, take these precautions

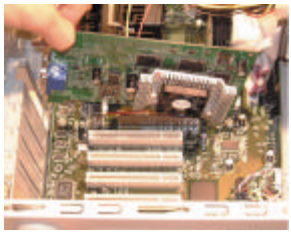
- Before touching any electronic part, drain the static electricity from your body. You can do this by touching the internal metal frame of your computer while it is unplugged
- Don't remove a board from the anti-static container until you are ready to install it. When you remove a board from your computer, place it back in its container.
- Don't let your clothes touch any electronic parts.
- When handling a card, hold it by its edges, and avoid touching its circuitry.

(1) Prepare your computer for installation : Before working on your computer, make sure all electrical codes are unplugged.

(2) Remove the system unit cover : You can easily find how to remove the system unit cover if you look carefully at the back of the system.

(3) Locate the AGP bus expansion slot. Make sure this slot is unobstructed. Remove the corresponding expansion slot cover form the computer chassis. (Remove the existing graphics board from AGP slot, if any)

(4) Place the board directly over AGP slot and insert one end of the card down into the slot firmly but gently. Make sure that the metal contacts on the bottom of the host adapter are securely seated in the slot.



(5) Fasten the bracket screw and replace the cover on the system unit.

(6) Connect your analog monitor's 15-pin VGA connector to the card and fasten the retaining screws. (if any)

(7) Connect other cables and devices if available.

. Driver Setup

Note

Please install the Graphics System Software, what is called "Driver Program", to take advantage of all the SUMA PLATINUM GeForce2 MX features.

The driver is in the installation CD.

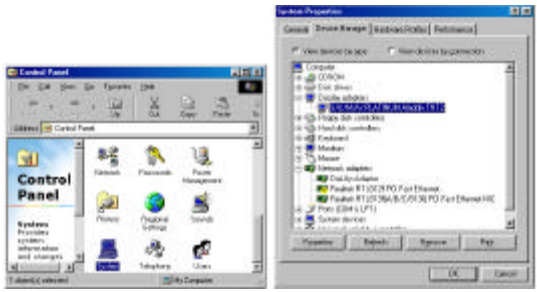
Information

The driver is normally updated 1-2 times a month. So you need to pay attention to SUMA Website in order to use the latest driver. You can update the driver at the SUMA Website (www.suma.co.kr) or nVIDIA Website (www.nvidia.com)

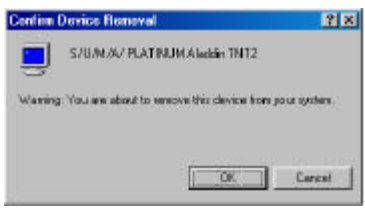
Before beginning

Keep this procedure if you had used Nvidia's graphics cards in your system before. If you had the Nvidia's detonator2 driver(M64, TNT2, GeForce) installed in your system, you'd better remove detonator2 driver from your PC as followings to enjoy the full features of this card.

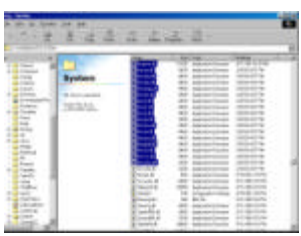
1. Click and select "*Start*" ***Settings*** ***Control Panel*** ***System*** ***Device Manager***



2. Choose "***Display Adapers***" and remove all the "***Nvidia 's Drivers***" in any.



3. Delete all the files starting with '***nv***' "***Windows/System***" and ' "***Windows/inf***" directory. Or type "***del Windows/System/nv*.****" and "***del Windows/inf/nv*.****" in Dos mode.



4. Re-install the driver in the CD.

-1 Autorun

Note

The driver is executed in “Auto-Run” Mode and it will vbe installed easily. “Auto-Run” will be executed immediately, when inserting the installation CD into your CDROM driver.

After starting windows and inserting the CD into the CDROM, the following menu will appear on the screen.

This is the first window of installation menu.

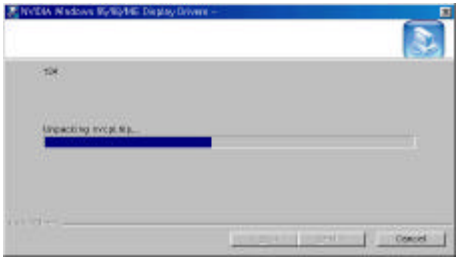
This menu consists of DirectX, Driver, Demo and Manual.

-1-1 Autorun Driver Installation

Following windows will appear if you click ***Driver*** icon in the first menu.

Select your OS and follow the steps described below to continue installation.

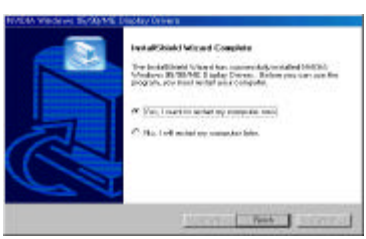
The EXE files will be unpacked.



The following is the initial window of Installation Program. Click ***Next***.

The dialogue box to check the consent to software licenses. Click ***Yes***

After completing the installation of the driver, ***restart*** your computer.



-1-2 Autorun DrirectX Installation

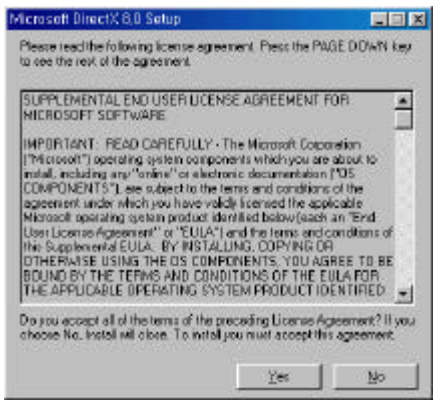
Before beginning

DirectX is the standard API which runs the Windows multimedia applicable program. You need to install Direct3D or OpenGL to execute Windows three-dimensional graphic program. OpenGL driver is automatically installed when installing VGA driver but for Direct3D, you need to install by yourselves. The latest version of DirectX 8.0. The program contains Windows9x version of "DX80ENG.EXE" and Windows NT version of "DX80ENG.EXE"

Click ***DirectX*** icon in the first menu and then select your ***OS***.

The dialog box to confirm the installation of DirectX 8.0 driver is on the screen. Click ***Yes***.

The message about the license agreement is on the display. When you select ***Yes***, the driver is automatically executed.



After finishing the installation of the DirectX driver, Click ***OK*** to restart.

-2 Windows 98 / 95

Before beginning

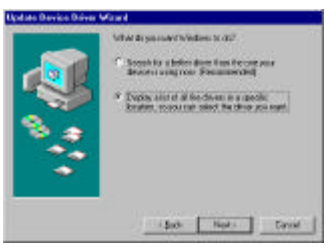
Only unless the drive is installed automatically, please take these precautions.

Note

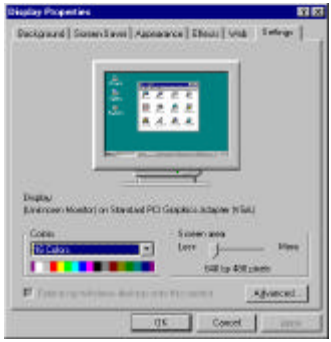
- To take advantage of all AGP features, please use Windows 95 OSR 2.1 (or above version) , or Windows 98.
- For other notes or release information, see the README files or Manual files in the installation CD disk.

(1) After installation of SUMA PLATINUM graphics board, start windows 98 / 95. When windo ws automatically detects your new graphics board, "New Hardware Found" dialog box appears on screen.

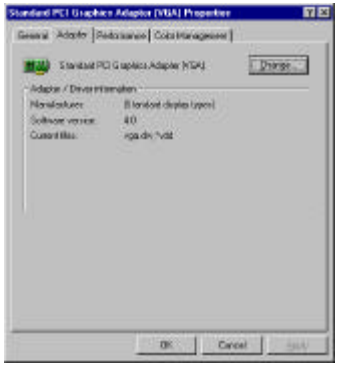
Click ***Next / OK*** buttons. When "Update Device Driver Wizard" dialog box appears on screen choose ***Display a list of all….*** and select ***Standard PCI Graphics Adapter (VGA.)***



(2) Click ***mouse right*** button on the desktop and select ***Properties*** from the popup menu. Or Click ***Start*** ***Setting*** ***Control panel***. And Double click ***Display*** icon from the Control Panel folder. Select ***Settings*** tab and ***Advanced*** button for windows 98 (***Advanced Properties*** button for windows 95).

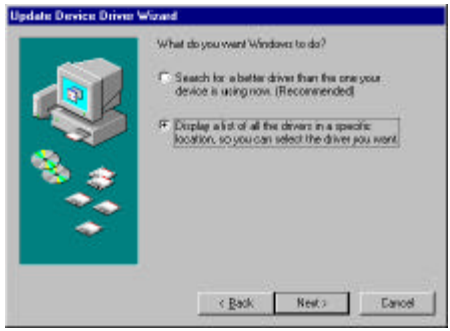


(3) Select ***Adapter*** tab and click ***Change*** button.

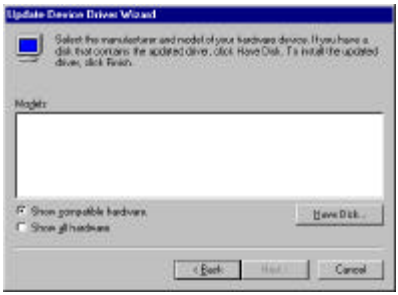


(4) When "Update Device Driver Wizard" dialog box appears on screen, click ***Next*** button.

Select "***Display a list of all…***" and click ***Next*** button.



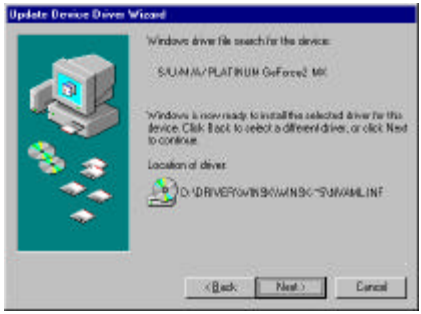
(5) Select "***Show compatible hardware***" and Click ***Have Disk…*** button.



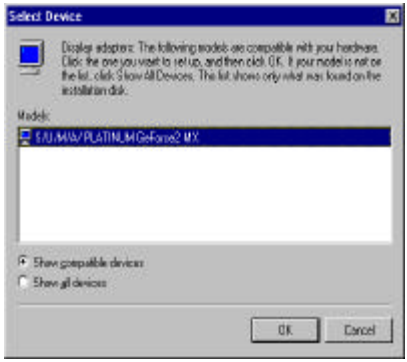
(6) Enter the driver path. ***(e:\drivers\win9x)***

Or click ***Browse*** button to select directory. ***(e:\drivers\win9x)***

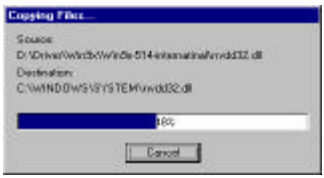
(7) If the driver path is correct, "Select Device" dialog box will appear on the screen. Select ***PLATINUM graphics cards (your card's name)***, then click ***OK*** . For example, if you have SUMA PLATINUM GeForce2 MX SIF A, you have to select SUMA PLATINUM GeForce2 MX.

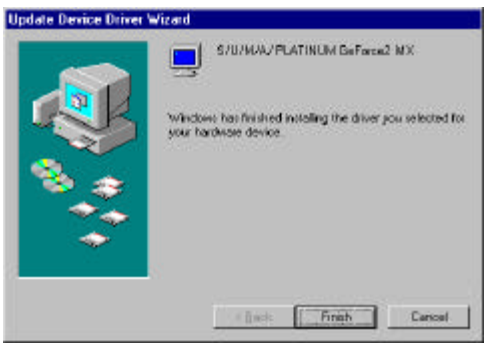


Make sure that you have chosen ***correct name***, and click ***Next*** button.



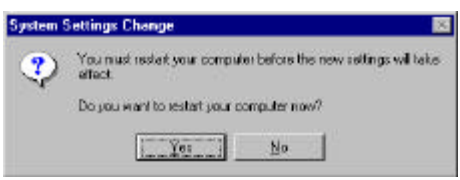
(8) After completing installing PLATINUM graphics card display driver, click ***Finish*** button.





(9) When returning to "Adapter" tab click ***Close*** button, and "Display Properties" dialog box, Click ***Close*** button.

(10) When the system prompts you to restart your computer, click ***Yes*** button**.**



After rebooting the system, you may enjoy the high performance digital display graphics card!

-3 Windows NT4.0 Setup Procedure

(1) Start Windows NT, switch display properties to ***VGA mode*** (16 bit color, 640X480 pixels), then restart your computer.

(2) After your computer restarts, click ***mouse right*** button on the desktop and choose ***Properties***.

(3) Select ***Settings*** tab, choose ***Display Type.***

(4) Select ***Adapter Type*** and click ***Change***.

(5) Click ***Have disk*** .

(6) Insert the ***Installation CD*** in the CDROM/DVDROM

(7) Enter the path. (***E:\drivers\NT40***), or click ***Browse*** to select the path of the display driver for Windows NT and click ***OK***.

(8) Select ***SUMA PLATINUM graphics card (your card name)*** and then click ***OK***.

(9) Windows NT will once again prompt for confirmation. All appropriate files are then copied to the hard disk. When all the files are copied, go back to the Display Properties dialog box by clicking ***Close***. Then chick ***Apply*** button.

(10) When the "System Settings change" dialog box is displayed, click Yes to restart Windows.

After rebooting the system, you may enjoy the high performance digital display graphics card!

-4 Windows 2000 Setup Procedure

Before beginning

After installing SUMA PLATINUM graphics board and restarting your computer, Windows 2000 may detect new hardware and show "Found New Hardware Wizard" dialog box. Complete the following procedure

(1) Insert the ***Installation CD*** in the CDROM./DVDROM

(2) Select "***Display a list of known drivers***", and click ***Next*** button in the "Found New Hardware Wizard" dialog box.

(3) Click ***Have disk*** and click ***Browse*** to select the path of the display driver for Windows 2000 and click ***OK***.

(4) Open Windows 2000 folder in the CD, then make a double click on the ***.inf*** file displayed.

(5) Click ***Next*** to finish the installation.

(6) When the installation is complete, click ***Finish***, and then click ***Apply***.

(7) Click Restart to complete the process.

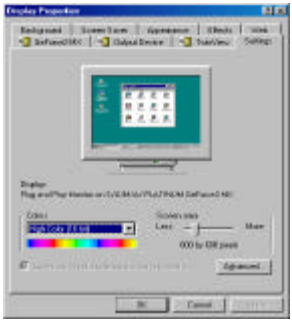
After rebooting the system, you may enjoy the high performance digital display graphics card!

. Display Properties

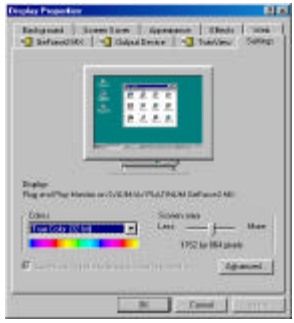
After installing the display drivers, you are now ready to configure the display properties of your graphics board.

-1 Color and Resolution

To open the properties page for your computer or change the display properties, click ***Start***, point ***Settings***, click ***Control Panel***, double click ***Display***, choose ***Settings*** tab. Or double click ***mouse right*** button, point ***Display Properties*** and choose Settings tab.



High Color(16bit), 800 x 600



True Color(32 bit), 1152 x 864

- ***Colors*** : You can choose the colors. ***True Color (32 bit)*** recommended
- ***Screen area*** : You can select the resolution. up to 2048 X 1536.

After choosing the colors and resolution, click ***Advanced*** button.

-2 Additional Properties

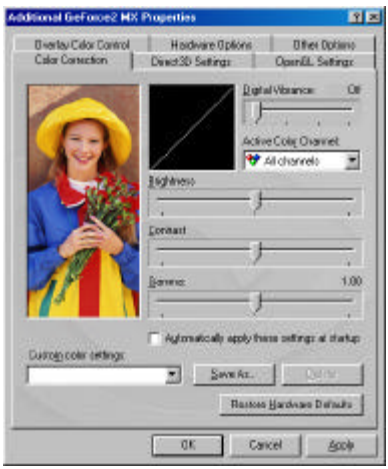
Choose the tab whose name is same with your card. For example if your card is SUMA PLATINUM GeForce2 MX, you may find GeForce2 MX tap as below. The tap lists the relevant information about your graphics board. Aside from this, it has links to the nVIDIA.com.

You can also visit www.suma.co.kr web site for updated information about the graphics board, latest drivers, and other information.

To change display properties, click ***Additional Properties*** button.

-3 Color Correction

It allows you to make color adjustments, such as brightness, contrast, and gamma values for each or all of the RGB colors. This function is not available when the screen is in 256 color mode.



Active Color channel

You can adjust all channels at once or individual channels from the Active Color Channel

- ***All channels*** : adjust all channels(colors) at once
- ***Red*** : adjust Red channels only
- ***Green*** : adjust Green channels only
- ***Blue*** : adjust Blue channels only

-4 Direct3D Settings

It allows you to make adjustments on the color settings for your direct3D games, namely Mipmapping, Anti-Aliasing.

Performance and Compatibility Options

It lets you set options that affect the performance and compatibility of your Direct3D games.

Mipmapping

It lets you set options that affect the performance and compatibility of Direct3D games.

-4-1 More Direct3D

Texel Aligment

Changing these values will change where the texel origin is defined. Dragging the slider to the left positions the texel origin toward the upper left corner and to the right positions it toward the center. The selected value is shown at the top. (Range : 0 to 7, Default : 3)

PCI Texture Memory Size

You can set the amount of system memory for texture storage. (This setting applies only to PCI display adapters or AGP display adapter running in PCI compatibility mode.)

-4-2 Antialiasing

It allows you to determine which degree of hardware anti-aliasing control to be used in Direct3D. Enabling anti-aliasing much improve the image quality while the applications performance is somewhat reduced.

Hardware Antialiasing Control

You can select the degree of antialiasing to be used in Direct3D applications.

1 : disable anti-aliasing

2 : High resolution, Mipmap 1x2 super sampling

3 : Low resolution, Mipmap 2x2 super sampling

4 : High resolution, Mipmap 2x2 super sampling

5 : Low resolution, Mipmap 2x2 super sampling (3x3 down filtering)

6 : High resolution, Mipmap 3x3 super sampling

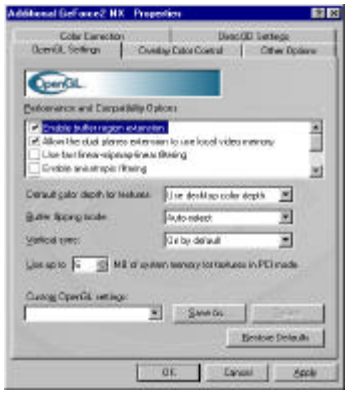
7 : Low resolution, Mipmap 3x3 super sampling

8 : High resolution, Mipmap 4x4 super sampling

9 : Low resolution, Mipmap 4x4 super sampling

-5 OpenGL Settings

It allows you to adjust the detail configuration of your OpenGL settings.



Performance and Compatibility Options

It lets you set options that affect the performance and compatibility of your OpenGL applications.

Default color depth for textures

This option determines whether texture of a specific color depth should be used by default in OpenGL applications

- ***Use desktop color depth*** : default
- ***Always use 16bpp color depth*** : 16-bit color mode
- ***Always use 32bpp color depth*** : 32-bit color mode

Buffer flipping mode

This option determines the buffer flipping mode for full-screen OpenGL applications.

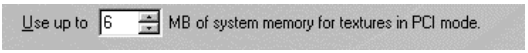
- ***Auto select*** : default
- ***Buffer flip*** : dual buffer transfer mode
- ***Block transfer*** : prevent the graphics form blinking

Vertical sync

This option lets you specify how vertical sync is handled in OpenGL.

System memory for texture in PCI mode

This option lets you set the amount of system memory for texture storage.

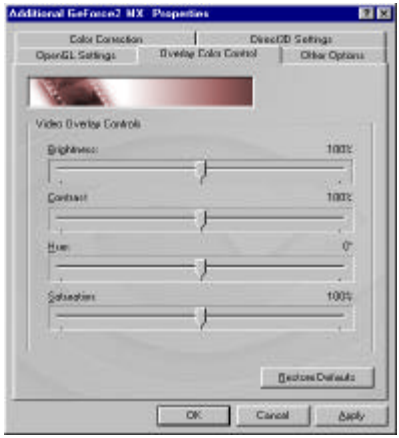


The maximum amount of system memory for texture storage depends on the physical memory installed on your system.

(This setting applies only to PCI display adapters or to AGP display adapters running in PCI compatibility mode)

-6 Overlay Color Control

It allows you to make adjustments on the quality of video or DVD playback on your monitor. You can independently control the Brightness, Contrast, Hue and Saturation to achieve optimal image quality when playing back videos or DVD movies on your computer.



Video Overlay Controls

Dragging a slider to the left decreases the level and to right increases it. The number at the right of each slider displays the levels.

- ***Brightness*** : Range 0 – 200 %, Default 100 %
- ***Contrast*** : Range 0 – 200 %, Default 100 %
- ***Hue*** : Range –180 – +180° , Default 0 °
- ***Saturation*** : Range 0 – 200 %, Default 100 %

-7 Other Options

It allows you to select the proper timing mode of your monitor and display the Quick Tweak icon in the taskbar.

Monitoring Timing

This option lets you select the proper timing mode for your monitor.

- ***Auto -Detect(let Windows determine the proper mode)***

  Windows receives the proper timing information directly from the monitor itself. (default setting)

- ***General Timing Formula (GTF)***

  Standard used by most new hardware

- ***Discrete Monitor Timing (DMT)***

  An older standard still in use on some hardware

. Option

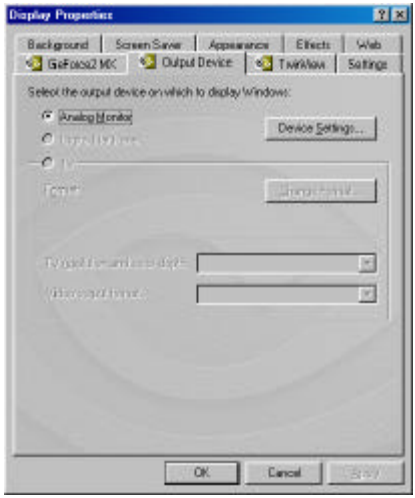
-1 Output Device

You can select the output devices with this option.

If your card has only D-Sub, you are able to select only "***Analog Monitor***".

If your card has TV-out device, you are able to select "***TV***".

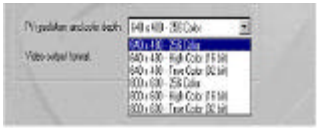
If your card has DVI connector, you are able to select " ***Digital Flat Panel***".



-1-1 TV-out

Change TV Format : Select your country and TV Format.

TV Resolution and Color Depth : Choose TV resolution and color depth.



- 640 X 480, 256 Color
- 640 X 480, High Color (16 bit)
- 640 X 480, True Color (32 bit)
- 800 X 600, 256 Color
- 800 X 600, High Color (16 bit)
- 800 X 600, True Color (32 bit)

Video Output Format : Select the video output format

- Auto-select
- Composite Video-Out
- S-Video-Out

-2 TwinView

This option allow you to connect two separate output device (analog monitor, flat panel, or TV) to a single PLATINUM GeForce2 MX TwinView card.

-2-1 Standard (Twinview Disable)

This option allows you to disable TwinView.

-2-2 Extended Desktop

You can configure each display device individually. Each device will display differently.

-2-3 Clone

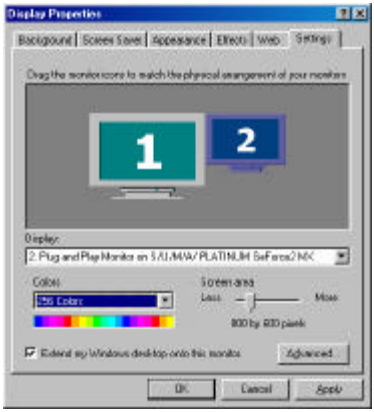
You can configure each display device individually. Each device will display the same.

Restart : You have to restart your system after selecting the TwinView mod e

-2-4 TwinView Display Properties

Click ***mouse right*** button on the desktop and select ***Properties*** from the popup menu. Or Click ***Start*** ***Setting*** ***Control*** panel. And Double click ***Display*** icon from the Control Panel folder. Select ***Settings*** tab and ***Advanced*** button for windows 98

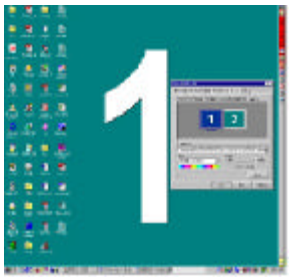
(or ***Advanced Properties*** button for windows 95).



Monitor 1 is your primary monitor which is connected to the first D-sub. Click ***Monitor 1*** and select color depth and resolution of ***Monitor 1***.

Monitor 2 is your additional monitor which is connected to the secondary D-sub or DVI. Click ***Monitor 2*** and select color depth and resolution of ***Monitor 2***.

If you are clicking ***Monitor 1*** for a few second, the 1 will appear on the ***Monitor 1***.

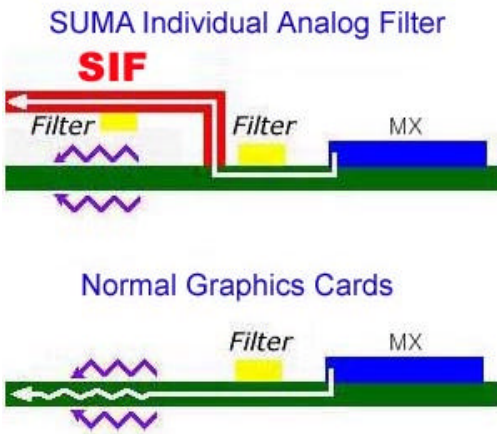


If you are clicking ***Monitor 2*** for a few second, the 2 will appear on the ***Monitor 2***.

-3. SIF (SUMA Individual analog Filter)

-3-1 **SIF is**

SIF is short for SUMA Individual analog Filter. SIF technology is developed by SUMA own R&D Lab. SUMA has the property in SIF technology.



As you can see above picture, SIF is the technology to improve image quality by separating and filtering graphics signals. In case of normal graphics cards, graphics signals are interrupted by chipsets and microwaves because they go through main PCB.

However in case of SIF graphics cards, graphics signals are separated by daughter board. Therefore SIF technology can reduce interruption from main board. By filtering graphics signals after separation, SIF technology can improve image quality.

-3-2 How to use SIF

SUMA provides 4 kinds of SIF graphics cards. Specially you can buy and upgrade your graphics cards by purchasing SIF daughter board. For example the customer who uses SIF Type A graphics card (1 D -Sub only) can upgrade it and enjoy TwinView (Dual Display) by purchasing only SIF Type B daughter board.

SIF Type “A” : Normal, 1 D-Sub (1 CRT monitor only)

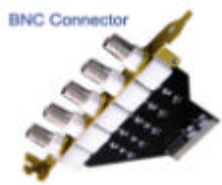
SIF Type “B” : TwinView, 2 D-Subs (2 CRT monitors)

SIF Type “C” : TwinView, 1 D-Sub & 1 DVI

(1 CRT monitor + 1 Flat panel or another CRT monitor)

SIF Type “D” : BNC connector & BNC Cable

(Bundled SIF Type “A” free of charge)



-3-3 Test Report of SIF

Note :

This test was done by SUMA R&D Lab. Graphics signals was given to be given an ascilloscope test. Test result can be changed depending on test system and software. We compared SUMA PLATINUM MX SIF Type D with SUMA PLATINUM MX Black.

Test System :

CPU : Intel Pentium3 800MHz

RAM : Samsung PC133 128MB

HDD : Samsung 20GB

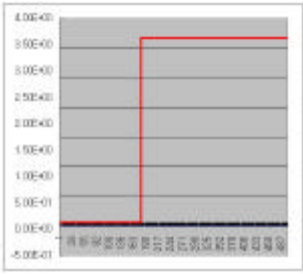
M/B : Aopen AX3S Pro

Graphics Cards

(1) SUMA PLATINUM GeForce2 MX SIF Type D 32MB SDR

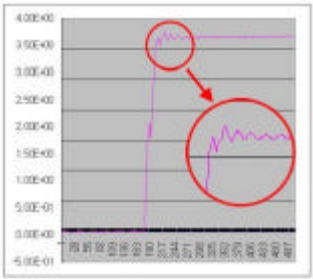
(2) SUMA PLATINUM GeForce2 MX Black 32MB SDR

-3-4 H Sync Test

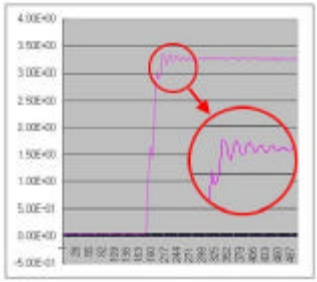


<Ideal H Sync Signal>

Above picture is the graph of ideal H Sync.



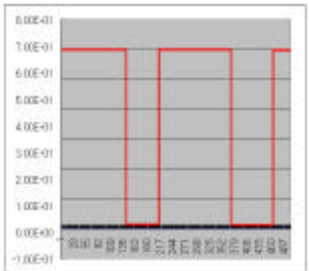
<SIF Type D>



<Normal MX>

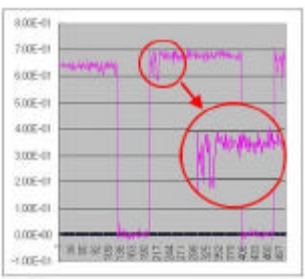
Under 1280 x 1024 at 85MHz, the H Sync signal of SIF Type “D” is similar to ideal one and has little up-and-down while the H Sync signal of normal MX looks like a hedgehog.

-3-5 R Signal Test

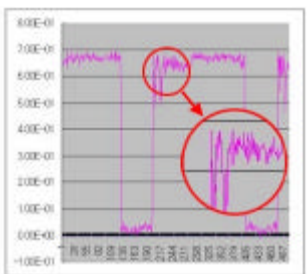


<Ideal R Signal>

Above picture is the graph of ideal R Signal.



<SIF Type D>



<Normal MX>

You may find the obvious difference, when testing R signals.

Under 1280 x 1024 at 85MHz, the R signal of **SIF Type "D"** is much similar to ideal one and has just about 1 degree of up-and-down while the R signal of **normal MX** has about 2 degree of up-and-down.

This test report proves that the Image Quality of SIF is **much better** than it of Normal MX.

. Troubleshooting

(1) After installing and restarting, Windows 98/95 informs me that the display setting is still incorrect.

- Make sure the "Assign IRQ to VGA" option is enabled in the BIOS.
- Check if there is enough IRQ for VGA.
- Uninstall the driver, restart and reinstall the driver.

(2) My monitor is not capable of high resolution or refresh rate.

- It depends on the display characteristics of your monitor. Consult your monitor documentation for the proper configuration.

(3) DirectX or the other applications report no AGP memory available.

- Windows 95 is not OSR2.1 or later.
- DirectX version is not 6.0 or later.
- You have not installed appropriate driver for the AGP chipset.
- Incorrect BIOS settings. BIOS must support at least 64MB for AGP aperture size

(4) Games or applications report " No 3D acceleration hardware found."

- 3D works only in 16-bit or 32-bit color depth. Switch your color depth display mode to 16-bit (High Color) or 32-bit (True Color)
- Check necessary libraries, such as DirectX or OpenGL.
- Try to switch to a lower resolution.

(5) I can not enable AGP memory or run I-Base test.

- You may be using a mainboard with an Aladdin AGP set. To get the best compatibility, the display card uses AGP Bus Master mode instead of AGP execution mode for mainboard using this AGP set.

(6) My MPEG player displays bad quality video clips.

- You must install DirectX 6 or later so that your player can take advantage of the hardware acceleration mode (DirectDraw)
- Try to switch to a lower resolution, color depth or refresh rate.
- Switch dual view mode to VGA or TV mode.