NVIDIA

GeForce 3

3D GRAPHIC ACCELERATOR

MANUAL

NVIDIA GeForce 3 User's Manual

TABLE OF CONTENTS

1. NVIDIA GeForce 3 Features

SP7000 GeForce 3   AGP bus, with 64MB DDR SDRAM on Board

nfiniteFX engine for full programmability

Lightspeed Memory Architecture for unmatched performance

Surface engine for high-order surfaces and patches

Programmable Vertex Shader

- Procedural deformations   - Morphing
- Programmable matrix palette skinning   - Keyframe animation interpolation
- Fog effects   - Lens effects

Programmable Pixel Shader

- Phong-style lighting for per-pixel accuracy   - Dot3 bump mapping
- Environmental bump mapping (EMBM)   - Procedural textures
- Per-pixel reflections

HRAA—high-resolution antialiasing

- Featuring Quincunx AA mode

Integrated hardware transform engine

Integrated hardware lighting engine

DirectX ® and S3TC ® texture compression

Dual cube environment mapping capability

- Reflection maps   - Accurate, real-time environment reflections

Hardware accelerated real-time shadows

Performance

- 3.2 billion AA samples per second fill rate   **-** 7.36GB/sec memory bandwidth

Lightspeed Memory Architecture amplifies memory bandwidth

True, reflective bump mapping

- Z-correct bump mapping
- Phong-style lighting effects on bump maps with reflections

High-performance 2D rendering engine

- Optimized for 32-, 24-, 16-, 15- and 8-bpp modes
- True-color hardware cursor with alpha
- Multi-buffering (double, triple or quad) for smooth animation and video playback

High-quality HDTV/DVD playback

- High-definition video processor (HDVP) for full-screen, full-frame video playback of HDTV
  and DVD content
- Motion compensation
- 8:1 up/down scaling
- DVD sub-picture alpha-blended compositing

Comprehensive system interface

- AGP 4X support, including Fast Writes and Execute Mode
- NTSC or PAL TV output (optional)
- DVI 29 pin output connector, support TMDS Panellink resolution up to SXGA/UXGA and
  analog RGB output (optional)
- Windows 2000, Windows NT 4.0 display drivers
- Windows Me, Windows 98 display drivers, DirectDraw, Direct3D, DirectVideo, ActiveX
- OpenGL ICD for Windows 98, Windows Me, Windows 2000, Windows NT, and Linux

2. GeForce 3 Board Outline
2.1 GeForce 3 using DDR SDRAM (SP7000)
64M DDR SDRAM on board
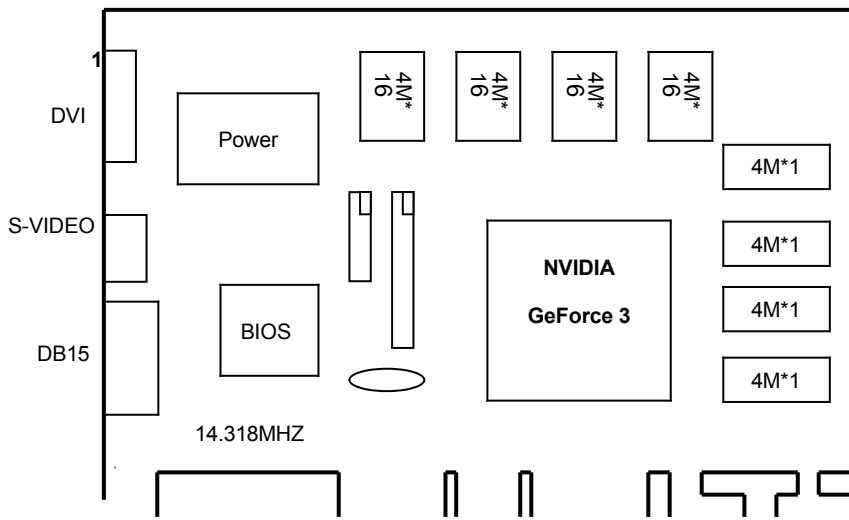
NOTE 1: TV output connector and encoder are reserved for optional
NOTE 2: DVI connector and LCD encoder are reserved for optional
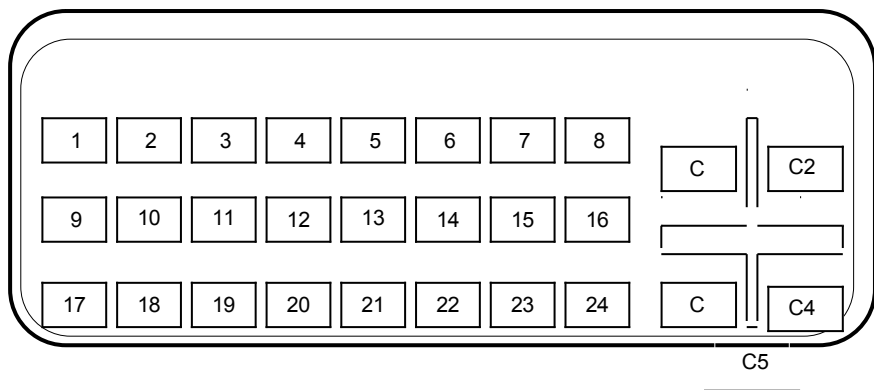
3.Hardware installation
3.1 Package Contents
1. NVIDIA GeForce 3 3D Accelerator card
2. CD title or Software diskettes
3. This manual

3.2 Installing the card
1. Turn off your computer
2. Remove the cover of the computer per the owner's manual
3. Install the card in the AGP bus slots
4. Replace the cover.

3.3 Micro Cross DVI Connector System

"Micro Cross:"/high speed pins;
C1   Analog Red Video Out
C2   Analog Green Video Out
C3   Analog Blue Video Out
C4   Analog Horizontal Sync
C5   Analog Common Ground Return (Red , Green , Blue Video Out)

Main Pin Field:
1.   TMDS Data 2-
2.   TMDS Data 2+
3.   TMDS Data 2/4 Shield
4.   TMDS Data 4-
5.   TMDS Data 4+
6.   DDC Clock
7.   DDC Data
8.   Analog Vertical Sync
9.   TMDS Data 1-
10. TMDS Data1+
11. TMDS Data1/3 Shield
12. TMDS Data 3-
13. TMDS Data 3+
14. +5V Power
15. Ground (+5, Analog H/V Sync)
16. Hot Plug Detect
17. TMDS Data 0-
18. TMDS Data 0+
19. TMDS Data 0/5 Shield
20. TMDS Data 5-
21. TMDS Data 5+
22. TMDS Clock Shield
23. TMDS Clock

24.   TMDS Clock

3.4 Resolutions and colors supported:

	Bits Per pixel	Memory Req. (MB)	Refresh Rates (HZ)
640*480	8	1MB	60/70/72/75/85/100/120/140/144/150/170/200/240
	16	1MB	60/70/72/75/85/100/120/140/144/150/170/200/240
	32	2MB	60/70/72/75/85/100/120/140/144/150/170/200/240
800*600	8	1MB	60/70/72/75/85/100/120/140/144/170/200/240
	16	1MB	60/70/72/75/85/100/120/140/144/170/200/240
	32	2MB	60/70/72/75/85/100/120/140/144/170/200/240
1024*768	8	1MB	60/70/72/75/85/100/120/140/144/150/170/200/240
	16	2MB	60/70/72/75/85/100/120/140/144/150/170/200/240
	32	4MB	60/70/72/75/85/100/120/140/144/150/170/200
1152*864	8	1MB	60/70/72/75/85/100/120/140/144/150/170/200
	16	2MB	60/70/72/75/85/100/120/140/144/150/170/200
	32	4MB	60/70/72/75/85/100/120/140/144/150
1280*960	8	2MB	60/70/72/75/85/100/120/140/144/150/170
	16	4MB	60/70/72/75/85/100/120/140/144/150/170
	32	8MB	60/70/72/75/85/100/120/140/144/150
1280*1024	8	2MB	60/70/72/75/85/100/120/140/144/150/170
	16	4MB	60/70/72/75/85/100/120/140/144/150/170
	32	8MB	60/70/72/75/85/100/120/140/144/150
1600*900	8	2MB	60/70/72/75/85/100/120/140/144/150
	16	4MB	60/70/72/75/85/100/120/140/144/150
	32	8MB	60/70/72/75/85/100/120
1600*1200	8	2MB	60/70/72/75/85/100/120
	16	4MB	60/70/72/75/85/100/120
	32	8MB	60/70/72/75/85/100
1920*1080	8	4MB	60/70/72/75/85/100
	16	8MB	60/70/72/75/85/100
	32	16MB	60/70/72/75/85
1920*1200	8	4MB	60/70/72/75/85/100
	16	8MB	60/70/72/75/85/100
	32	16MB	60/70/72/75/85
1920*1440	8	4MB	60/70/72/75/85
	16	8MB	60/70/72/75/85
	32	16MB	60/70/72/75
2048*1536	8	4MB	60/70/72/75
	16	8MB	60/70/72/75
	32	16MB	60

4. Smart Installation
   For Windows 95 OSR2.1, Windows 98, WindowsNT4.0 SP3, Windows Me
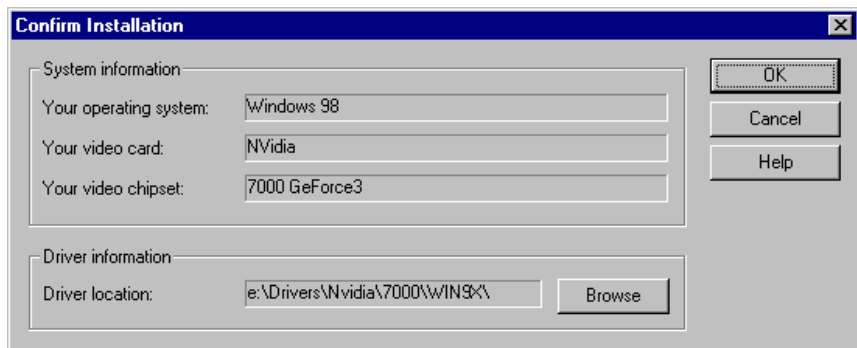
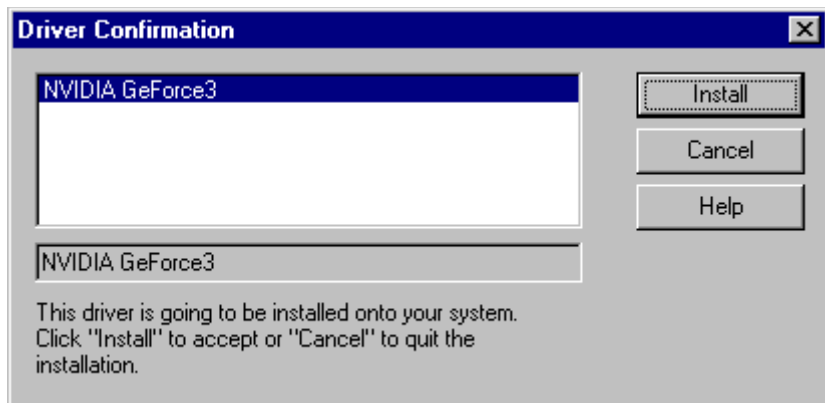**4.1** Put the DRIVERS CD in your CD-ROM

4.2 Click the **Driver installation**
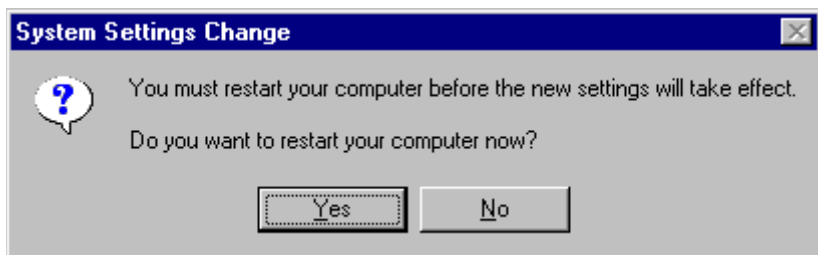**4.3** If everything fine, screen will show **Confirm Installation** window.
   Then Select the **OK**

4.4 Now appears the **Driver Confirmation** window
   Select the **Install**

4.5 Then restart your computer.

5. Manually install Windows 95 & Windows 98/ME drivers

5.1 Installation and Setup

5.1.1 Windows95
The Windows setup program installs and modifies all of the necessary files. Follow these steps to install the Windows 95 drivers.
- Insert the DISC (CD Title Driver).
- Select **Control Panel** from **My Computer** group.
- Select the **Display** icon
- Double-click on the **Display** icon in the Setting -> **Control Panel** folder. You can also click the right mouse button anywhere on the desktop and select the Properties option form the pop-out menu.
- Click the **Settings** tab.
- Click the **change** Display Type button.
- Click the **Have Disk** button.
- Change directories and Select **NVAML.inf (or other *.inf file)**
  Disc (CD Title) is **E:\drivers\Nvidia\7000\WIN9X**

Note: "E:"-> CD Drive **"Nvidia"->** VGA chip brand name **"7000"->** VGA model name
- Select AGP driver form the list and click the **OK** button. If a message stating that one or more driver files is older than the files on the system respond **YES** to overwrite the files.
- Click the Close button and Apply button, and restart your computer.

5.1.2 Windows98
The Windows setup program installs and modifies all of the necessary files. Follow these steps to install the Windows 98 drivers.
- Insert the DISC (CD Title Driver).
- Select **Control Panel** from **My Computer** group.
- Select the **Display** icon
- Double-click on the **Display** icon in the Setting -> **Control Panel** folder. You can also click the right mouse button anywhere on the desktop and select the Properties option form the pop-out menu.
- Click the **Settings** tab.
- Then show **Display Properties** tab
  Select Advanced…
- Then show **[Unknown Device.] Properties** tab
  Select **Adapter**
- Then show **Standard PCI Graphics…** tab
  Select **Change**
- Then show **Update Device …** tab
  Select **Next**
- Then show **Update Device …** tab
  Select **Search for a better…**
  Then select **Next.**
- Then show **Update Device …** tab
  If the **Specify a location** is wrong
  Please select **Brows**
- Then show **Browse for Folder** tab
Select **E:\drivers\ Nvidia\7000\WIN9X**

Note: "E:"-> CD Drive **"Nvidia"->** VGA chip brand name **"7000"->** VGA model name
Then select **OK**
● Then show **Update Device Driver Wizard** tab
  Select **CD-ROM driver**
  Click the **Specify a locator,** if right
  Then select **Next**
● Then show **Update Device Driver Wizard** tab
  Select **Next**
● Then show **Update Device Driver Wizard** tab
  Select **Finish**
● Then show **System Settings Change** tab
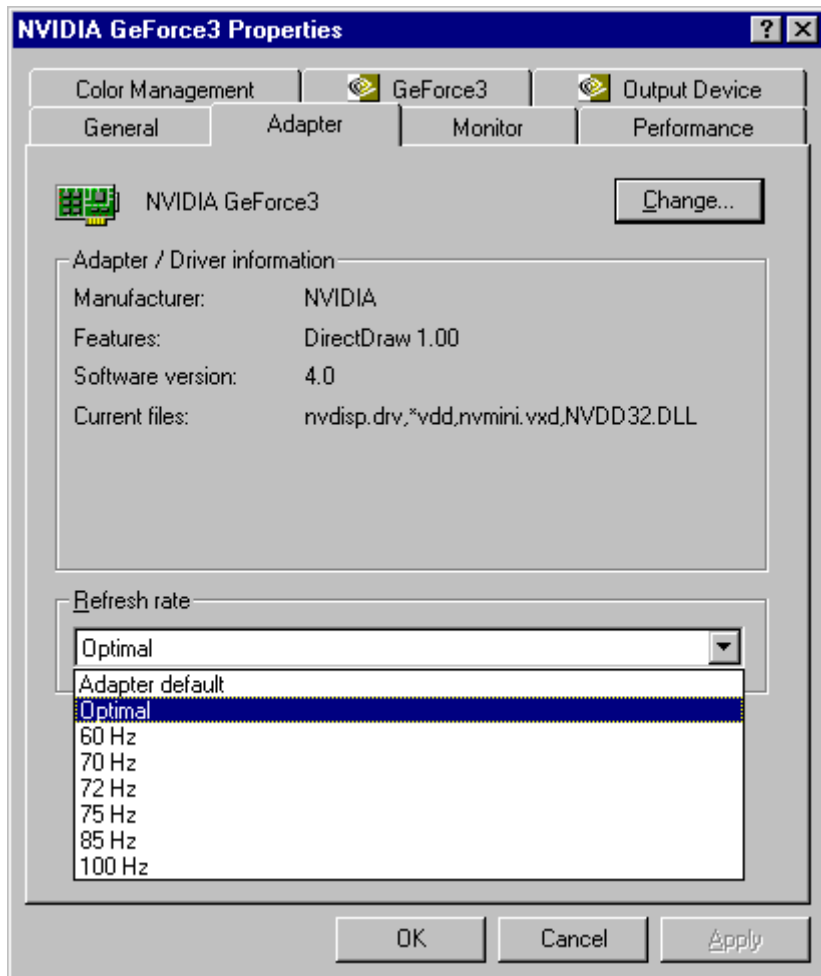 Select **OK**

5.2 How to Change Color Depth and Resolution

1. **Make sure that you have installed windows95/98 Driver.**
2. **Click on the** Start **box in the lower left corner and proceed to** Control Panel**.**
3. **Inside the** Control panel **group , click on** Display **icon to open the** Display Properties **folder and select the** Setting table
4. **Click on the pull-down arrow from the** Color **palette area to select color depth or adjust the sliding bar to either** Less **or** More **from the** Desktop area
5. **Select** OK **to restart system and new color depth or the new resolution takes effect.**

5.3 How to Change Refresh Rate
1. Make sure that you have installed windows95/98 Driver. Click on the **Start** box in the lower left corner and proceed to Setting, **Control Panel**
2. Inside the **Control panel** group , click on **Display** icon to open the **Display Properties** folder and choose **Settings** click the **Advance Settings** choose **Adapter**
3. Click on the **Refresh Rate** sub window to change refresh rate
4. Select **OK** and new refresh rate takes effect

Note: If your monitor is not Branded or Plug&Play, you will only see Adapter default and optimal. Please contact your monitor supplier to get right or compatible drivers for your monitor. Otherwise you can not select the refresh rate you wanted.

NVIDIA GeForce3 Properties ? ×

| Color Management | | 📀 GeForce3 | | 📀 Output Device |
| General | Adapter | Monitor | | Performance |

🖳 NVIDIA GeForce3   [Change...]

Adapter / Driver information

Manufacturer:	NVIDIA
Features:	DirectDraw 1.00
Software version:	4.0
Current files:	nvdisp.drv,*vdd,nvmini.vxd,NVDD32.DLL

Refresh rate

| Optimal | ▼ |

Adapter default
Optimal
60 Hz
70 Hz
72 Hz
75 Hz
85 Hz
100 Hz

[OK]   [Cancel]   [Apply]

- Refresh Rate default is Optimal.
- If you change Refresh Rate from Optimal to another, you maybe need to restart system

12

6. Windows NT 4.0
The following steps describe how to install Windows NT4.0 display drivers

1.   Select **Control Panel** from the **Main** group.
2.   Select the **Display** icon.
3.   Select **Change Display Type**.
4.   Select Change from the **Adapter Type** area.
5.   Select **Other**.
6.   Place the Disc (CD Title) into CDROM Drive. Click **OK**.
7.   Select I**nstall** and click "**YES**" when the Installing Driver dialog box appears.
8.   When the Windows NT **Setup** dialog box appears select CDROM, and click
     "**Continue**".

A message appears stating that drivers were successfully installed. Click **OK**. Another
message appears stating that the driver could not be restarted dynamically. Restart
Windows NT to run the new driver. Click **OK.**

7. Windows 2000
First time install drivers under windows2000

1. When system boot up, system will prompt find new device. Suppose the device is VGA, now system will find the default drivers for you.
2. If you want to install our drivers along with the SP6900 pack. Please put the drivers CD in your CDROM drive. If now shows SmartInstall window, please click **EXIT** button to quit.
3. Drivers for windows2000 are located at \drivers\nvidia\7000\win2000
4. If the drivers is very new may not certified by Microsoft, if so, system will prompt you the drivers do not have "digital signature", still you can force to install.
5. Follow on screen instructions will finish the installation.

The following steps describe how to update Windows2000 display drivers
1. Place the Disc (CD Title) into CDROM Drive. If now shows SmartInstall window, please click **EXIT** button to quit
2. Right click mouse button on Desktop Area, now shows a sub menu window. Please select **Properties**.
3. Now come up **Display Properties** window, please select **Settings** on the top.
4. Select **Advanced**
5. Select **Adapter**.
6. Select **Change**
7. Now comes up a update drivers wizard window. Please follow the on screen instruction.
8. Please specify the drivers location at your CDROM letter: \drivers\nvidia\7000\ win2000 or the directory where you put your drivers
9. Select **Install** and click "**YES**" when the Installing Driver dialog box appears. If the drivers is very new may not certified by Microsoft, if so, system will prompt you the drivers do not have "digital signature", still you can force to install.

A message appears stating that drivers were successfully installed. Click **OK**. Another message appears stating that the driver could not be restarted dynamically. Restart Windows2000 to run the new driver. Click **OK.**

8. Windows Me
The Windows setup program installs and modifies all of the necessary files. Follow these steps to install the Windows Me drivers.
- Insert the DISC (CD Title Driver).
- Select **Control Panel** from **My Computer** group.
- Select the **Display** icon
- Double-click on the **Display** icon in the Setting -> **Control Panel** folder. You can also click the right mouse button anywhere on the desktop and select the Properties option form the pop-out menu.
- Click the **Settings** tab.
- Then show **Display Properties** tab
  Select Advanced…
- Then show **[Unknown Device.] Properties** tab
  Select **Adapter**
- Then show **Standard PCI Graphics…** tab
  Select **Change**
- Then show **Update Device …** tab
  Select **Next**
- Then show **Update Device …** tab
  Select **Search for a better…**
  Then select **Next.**
- Then show **Update Device …** tab
  If the **Specify a location** is wrong
  Please select **Brows**
- Then show **Browse for Folder** tab
Select **E:\drivers\ Nvidia\7000\winME**
Note: "E:"-> CD Drive **"Nvidia"->** VGA chip brand name **"7000"->** VGA model name
  Then select **OK**
- Then show **Update Device Driver Wizard** tab
  Select **CD-ROM driver**
  Click the **Specify a locator,** if right
  Then select **Next**
- Then show **Update Device Driver Wizard** tab
  Select **Next**
- Then show **Update Device Driver Wizard** tab
  Select **Finish**
- Then show **System Settings Change** tab
  Select **OK**

FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two condition.(1).this device may not cause harmful interference. (2).this device must accept any interference received, including interference that may cause undesired operation

Warning:
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, used and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference in to radiate 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 into an outlet on a circuit different form that to which the receiver in connected.
- Consult the dealer or an experienced radio/TV technician for help.

Notice:
(1) An Unshielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord by used.
(2) Use only shielded cables to connect I/O devices to this equipment.3
(3) Changes or modifications not expressly approved by the party responsible for compliance could void the use's authority to operate the equipment.

Trademark Acknowledgments

All brand names and trademarks are the property of their owners.