NVIDIA RIVATNT

SP5000

3D GRAPHIC ACCELERATOR

MANUAL

NVIDIA RIVA TNT

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1. NVIDIA RIVA TNT

Description
Bus Type: 64Bit 66MHz 2X AGP Side band
CHIP Set: RIVA TNT
Memory Size: 16MB on Board with 512K X 32 SGRAM
16MB on Board with 1M X 16 SDRAM

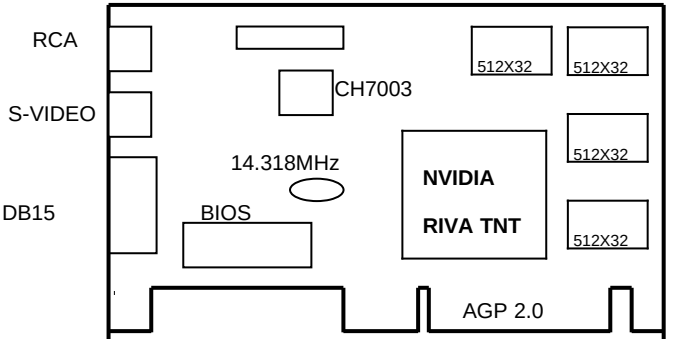
The RIVA TNT (TwiN-Texel) architecture is the first integrated, 128-bit 3D Processor that processes 2 pixels-per-clock cycle enabling single-pass multi-texturing. RIVA TNT 32-bit color pipeline, 24-bit Z-buffering, 8-bit stencil buffer and per-pixel mip-map-ping precision delivers unsurpassed quality and performance allowing developers to write standards based applications with stunning visual effects and realism.

Key Features

- Optimized for Direct3D acceleration with complete support for DirectX 5.0 and 6.0
- TwiN-Texel (TNT) 32-bit graphics pipeline
- 2 texture mapped, lit pixels per clock
- Single pass multi-texture rendering
- 32-bit ARGB rendering with destination alpha
- 24-bit Z-buffer, 8-bit stencil buffer
- Anisotropic filtering (better than Tri-Linear MIP-mapping)
- 100% hardware triangle setup engine
- High performance 128-bit 2D/GUI/DirectDraw Acceleration
- Video acceleration for DirectShow? MPEG-1, MPEG-2 and Indeo
- 128-bit wide frame buffer interface supporting up to 16M Byte SDRAM or SGRAM
- frame buffer configurations
- 250 MHz Palette-DAC supporting up to 1920x1200 @ 75Hz
- NTSC and PAL digital output port supporting external digital TV encoders(optional)
- Bi-directional Media Port
- Bus mastering DMA 266MHz AGP Interface with full side band support

Main Driver Support
Windows95 Windows98 Windows NT4.0

1.1 NVIDIA RIVA TNT Board Outline
SP5000 using SGRAM
16MB on board, board size: 144 x 97 mm.



2. Hardware Installation

2.1 Package Contents

1. NVIDIA RIVA TNT 3D Accelerator card.
2. CD title or Software diskettes
3. This manual.

2.2 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.

2.3 Resolutions and colors supported:

NVIDIA RIVA TNT with 16MB are fully compatible VGA with the addition of Hi-Color and True Color modes depending on the amount of video memory stalled. The amount of memory needed to display various resolutions is shown below.

Resolution & Colors	BPP	Refresh Rate (HZ)
640x480-256c	8	60/70/72/75/85/100/120/140/144/150/170/200/240
640x480-64Kc	16	60/70/72/75/85/100/120/140/144/150/170/200/240
640x480-16Mc	32	60/70/72/75/85/100/120/140/144/150/170/200/240
800x600-256c	8	60/70/72/75/85/100/120/140/144/170/200/240
800x600-64Kc	16	60/70/72/75/85/100/120/140/144/170/200/240
800x600-16Mc	32	60/70/72/75/85/100/120/140/144/170/200/240
1024x768-256c	8	60/70/72/75/85/100/120/140/144/150/170
1024x768-64Kc	16	60/70/72/75/85/100/120/140/144/150/170
1024x768-16Mc	32	60/70/72/75/85/100/120/140/144/150/170
1152x864-256c	8	60/70/72/75/85/100/120/140/144/150
1152x864-64Kc	16	60/70/72/75/85/100/120/140/144/150
1152x864-16Mc	32	60/70/72/75/85/100/120/140
1280x1024-256c	8	60/70/72/75/85/100/120
1280x1024-64Kc	16	60/70/72/75/85/100/120
1280x1024-16Mc	32	60/70/72/75/85/100
1600x1200-256c	8	60/70/72/75/85
1600x1200-64Kc	16	60/70/72/75/85
1600x1200-16Mc	32	60/70/72/75
1920x1080-256c	8	60/70/72/75/85
1920x1080-64Kc	16	60/70/72/75/85
1920x1080-16Mc	32	60/70/72
1920x1200-256c	8	60/70/72/75
1920x1200-64Kc	16	60/70/72/75
1920x1200-16Mc	32	60

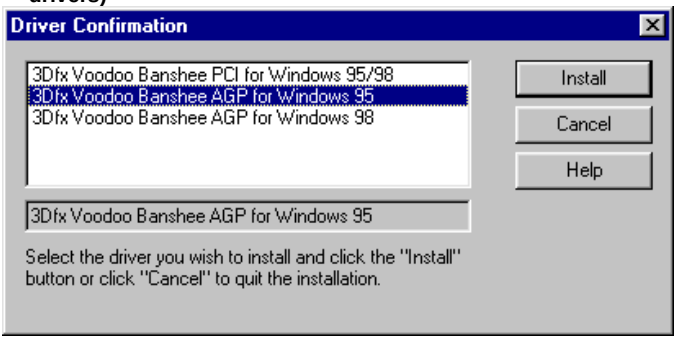
3. Smart Installation
For Windows 95 OSR2.1, Windows 98, WindowsNT4.0 SP3

3.1 Put the DRIVERS CD in your CD-ROM

3.2 Click the **Driver installation**

3.3 If everything fine, screen will show **Confirm Installation** window.
Then Select the **OK**

3.4 Now appears the **Driver Confirmation** window
Select the **Install**
(Here the picture shows Voodoo Banshee for example, if your are using NVIDIA RIVA TNT, Driver Confirmation window will show NVIDIA RIVA TNT drivers)



3.5 Then restart your computer.

4. Manually install Windows 95 & Windows 98 drivers

4.1 Installation and Setup

4.1.1 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 **banshee.inf**.(s3savage.inf)
  Disc (CD Title) is **E:\drivers\Nvidia\5000\WIN95**

Note: "E:"-> CD Drive **"Nvidia"->** VGA chip brand name **"5000"->** 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.

4.1.2 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 **[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\5000\win98**
  Disc (CD Title) is **E:\drivers\ Nvidia\5000\WIN95**

Note: "E:"-> CD Drive **"Nvidia"->** VGA chip brand name **"5000"->** 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**

4.2 How to Change Color Depth and Resolution

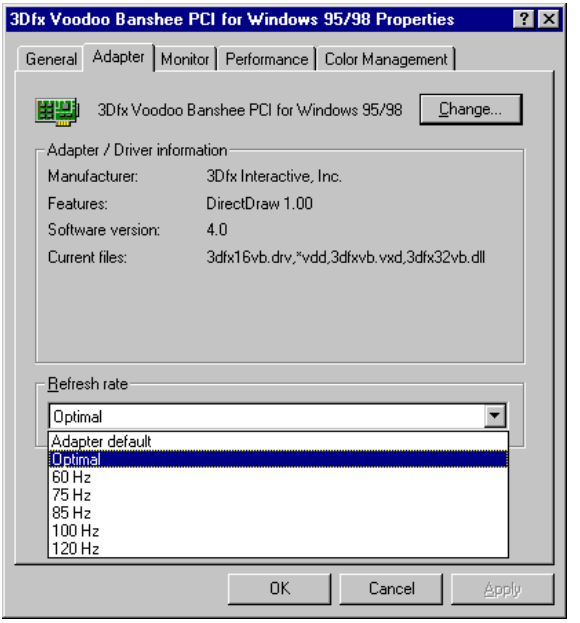
1. Make sure that you have installed windows95/98 Driver.
2. Click on the **Start** box in the lower left corner and proceed to **Control Panel**.
3. Inside the **Control panel** group , click on **Display** icon to open the **Display Properties** folder and select the **Setting table**
4. Click on the 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 **WINDOWS95** and new color depth or the new resolution takes effect.

4.3 How to Change Refresh Rate

Here the picture shows Voodoo Banshee for example

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.



- Here the picture shows Voodoo Banshee for example.
- Refresh Rate default is Optimal.
- If you change Refresh Rate from Optimal to another , you must be to restart WINDOWS 95 or 98

5. 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 C**hange Display Type**.
4. Select Change from the **Adapter Type** area.
5. Select **Other**.
6. Place the Disc (CD Title) into Driver. 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.**

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

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