M S - 8806

nVIDIA RIVA TNT2™

Graphics Accelerator ***User's Guide***

VERSION 1.0
1999/04/21 ROC

CE

FCC-B Radio Frequency Interference Statement

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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Notice 1
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2
Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

MICRO-STAR MS-8806

FC

Tested to Comply with FCC Standard

FOR HOME OR OFFICE USE

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Chapter 1

MS-8806 nVIDIA RIVA TNT2™ Graphics Accelerator

1. Overview

The MS-8806 nVIDIA RIVA TNT2™ Graphics Accelerator is a 128-bit 3D Processor that processes 2 pixels-per-clock cycle enabling single-pass multi-texturing. RIVA TNT2's 32-bit color pipeline, 24-bit Z-buffering, 8-bit stencil buffer and per-pixel mip-mapping precision delivers unsurpassed quality and performance allowing developers to write standards based applications with stunning visual effects and realism.

2. Features

Chip List:

❒ **nVIDIA RIVA TNT2™ :** 2D & 3D accelerator processor.

General Features

- Optimized for Direct3D acceleration with complete support for DirectX 5.0 and 6.0
- High performance 128-bit 2D/GUI/DirectDraw Acceleration
- Video acceleration for DirectShow™, MPEG-1, MPEG-2 and Indeo®
- 300MHz Palette-DAC (RAMDAC)
- Digital Flat Panel interface with scaling and filtering for flat panels up to 1280x1024
- NTSC and PAL digital output port supporting external digital TV encoders
- AGP 4x/2x interface with full sideband support

Graphics Device Integration

- Optimized Direct3D acceleration
- Anisotropic Filtering
- 100% hardware triangle setup
- Twin texel (TNT) 32-bit graphics pipeline
- Per Pixel perspective correct texture mapping
- 24-bit or 16-bit Z-buffer (floating point or integer)
- 8-bit stencil buffer
- Anti-aliasing, full scene and order independent

Video Processor

- Advanced support for DirectDraw
- Back-end hardware video scaling for video conferencing and playback
- Hardware color space conversion (YUV 4:2:2 and 4:2:0)
- Support for scaled field interframing for reduced motion artifacts and reduced storage
- Per-pixel color keying
- Multiple video windows with hardware color space conversion and filtering
- DVD sub-picture alpha blended compositing

Digital TV Output

- Dual independent TV and 16bpp monitor display using the encoder's programmable timing generators in master mode
- Full screen pass-through mode
- Transfers 24-bit RGB pixel data using 12-bit words in multiplexed form
- Supports 640x480, 640x400, 720x400, 800x600, and 512x384 resolutions

Full Software Support

- Windows® 95 and 98 Display Drivers
- Direct3D, DirectDraw, and DirectVideo
- OpenGL ICD support for Windows® 9x and NT
- Glueless Accelerated Graphics Port (AGP 1.0 and AGP 2.0) interface
- Windows® NT4.0 and 2000 support

Supports super high resolution graphics modes

- 640x480 8/16/32 bit colors with 240Hz
- 800x600 8/16/32 bit colors with 240Hz
- 1024x768 8/16/32 bit colors with 200Hz
- 1280x1024 8/16/32 bit colors with 120Hz
- 1600x1200 8/16/32 bit colors with 85Hz
- 1920x1200 8/16/32 bit colors with 75Hz

3. System Requirements

To install MS-8806 VGA card, your computer system needs to meet the following requirements:

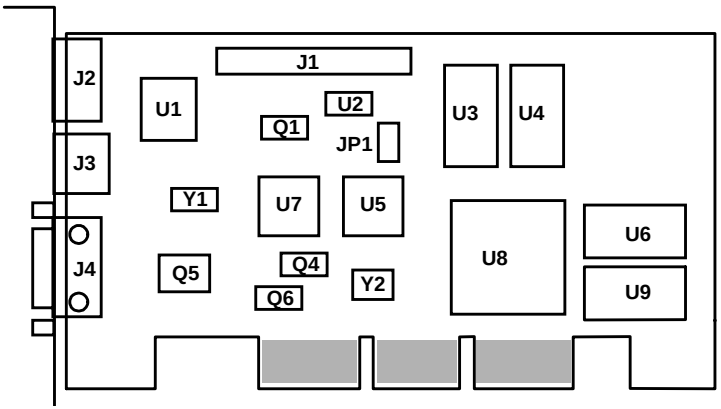
Computer	Intel Pentium® processor, Intel Pentium® II/III processor or compatible system
Expansion Slot	AGP slot
Monitor	VGA Support, minimum 640x480 resolution
Operating system	Windows® 95/98, Windows® NT 4.0.
CD-ROM	Double Speed or Higher

4. Package Contents

Before installing the MS-8806 VGA card, please check to make sure that your package is complete:

- VGA card
- CD
  - drivers and applications on CD
  - documentation on CD
- User's Guide on CD

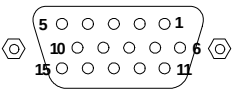
5. Card Layout



U8	nVIDIA RIVA TNT2 AGP processor
*U7	Brooktree BT868 TV-Out
U5	VGA BIOS PLCC
U2	QS3861 (reserved)
U3,U4,U6,U9	SDRAM 2M*32
*U1	SiI 154 DFP Chip
*Y1	Crystal 13.5MHz TV-Out
Y2	Crystal 14.31818MHz
*J3	S-Video Connector TV-Out
J1	Feature Connector (reserved)
J4	VGA Connector
*J2	Digital Flat Panel Connector
*JP1	TV-Out NTSC/PAL Jumper
*Q1	TL431
Q5	MOSFET-N
*Q6	TL431 DIP
Q4	TL431 SMD

*** Optional Components**

6. DB 15 Pin Connector



Analog Video Display Connector(DB15-S)	
Pin	**Signal Description**
1	Red
2	Green
3	Blue
4	Not used
5	Ground
6	Ground
7	Ground
8	Ground
9	Not used
10	Ground
11	Not used
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

7. Vertical Refresh Rate

Resolution	Color	Vertical Refresh (Hz)
640x480	8bit, 16bit, 32bit	60,75,85,100,120,140,160,200,240
800x600	8bit, 16bit, 32bit	60,75,85,100,120,140,160,200,240
1024x768	8bit, 16bit, 32bit	60,75,85,100,120,140,160,200
1280x1024	8bit, 16bit, 32bit	60,75,85,100,120
1600x1200	8bit, 16bit, 32bit	60,75,85
1920x1200	8bit, 16bit, 32bit	60,75

Chapter 2

Installation of nVIDIA RIVA TNT2™ VGA Driver

1. Driver

1.1 Install Enhance Drivers for Windows® 95/98

After installing the MS-8806 VGA card into the mainboard, Windows® 95/98 will auto-detect changes in your hardware configuration; this will install the Standard VGA Driver. To get the maximum performance, you need to install the MS-8806 driver.

Before installing MS-8806 driver, you need to install theWindows® 95 OSR2 USB supplement to support the AGP function. Windows® 98 need not install this.

To install MS-8806 enhanced driver, follow the steps below:

Step 1: Insert the **CD_Title** provided into your CD-ROM drive.

After inserting the **CD_Title**, this will autorun showing this window.

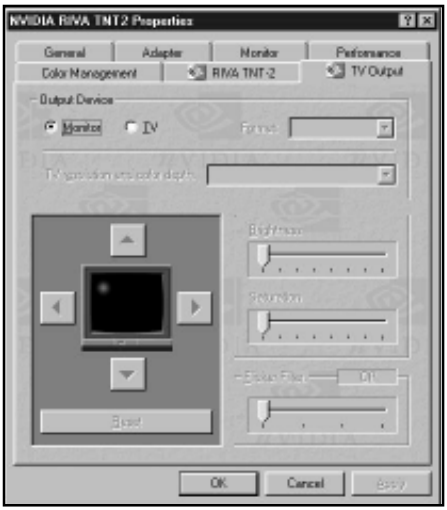
Step 2: Click on **Install VGA Drivers** button.

Step 3: Click on the **OK** button. This will copy the necessary files into the hard drive.

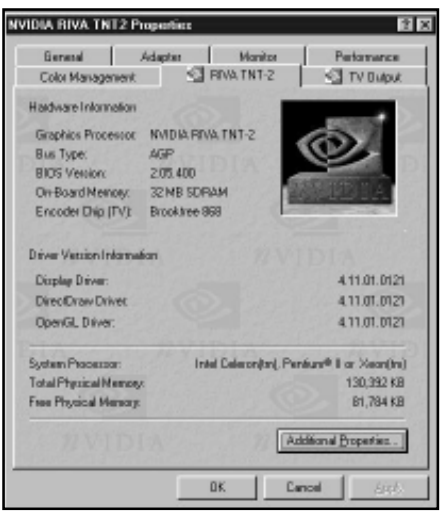
Step 4: Choose **OK**, to restart the computer now.

New Display Properties:

This function is used for setting Color palette, and Desktop Area.



This function is used for setting which output device to use., whether TV-Out(optional) or Monitor.



This shows Hardware Information/BIOS version/Memory Size.

This item is for 3D setting and OpenGL setting.

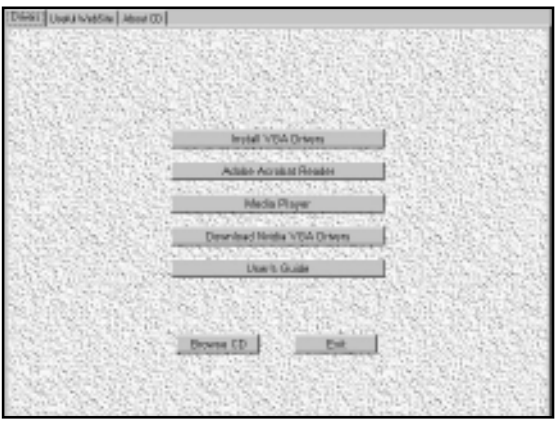
1.2 Install Enhance Drivers For Windows® NT

You need to install the Windows® NT 4.0 "Service Pack 3", before installing the driver.

After installing MS-8806 Card, Windows® NT will default to Standard VGA mode 640x480x16 colors.

To install MS-8806 enhanced driver, follow the steps below:

Step 1: Insert the **CD_Title** provided into your CD-ROM drive.



After inserting the **CD_Title**, this will autorun showing this window.

Step 2: Click on **Install VGA Drivers** button.

Step 3: Click on the **Next** button. This will copy the necessary files into the hard drive.

Choose Yes, I want to restart my computer now.

Step 4: Click on the **Finish** button.

Using Display Properties new function:

This function is used to show the Display Driver version, chip version and memory size.

This function is used for setting Color palette, Desktop Area and Refresh rate.