RIVA TNT

Product Overview

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PRODUCT DESCRIPTION

The RIVA TNT™ is the first integrated, 128-bit 3D processor that processes 2 pixels per-clock-cycle which enables single-pass multi-texturing and delivers a mind-blowing 250 million pixels-per-second fill rate. RIVA TNT's (twin-texel) 32-bit color pipeline, 24-bit Z, 8-bit stencil buffer and per-pixel precision delivers unsurpassed quality and performance allowing developers to write standards-based applications with stunning visual effects and realism.

The RIVA TNT offers industry-leading 2D and 3D performance, meeting all the requirements of the mainstream PC graphics market and Microsoft's PC'98 and DirectX 6.0 initiatives. The RIVA TNT delivers the industry's fastest Direct3D™ acceleration solution and also delivers leadership VGA, 2D and video performance enabling a range of applications from 3D games to DVD and video conferencing. A complete high performance OpenGL ICD is included in the standard software driver package.
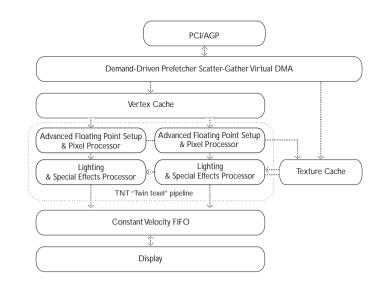
ARCHITECTURE HIGHLIGHTS

- 128-bit wide graphics engine and frame buffer

- Massive 3.2GB/sec frame buffer bandwidth
  architecture supporting up to 200MHz memory

- 250 million pixels/sec peak fill rate

- 8 million triangles/sec peak

- Large 12K on-chip cache

- 10GFLOPS floating-point geometry processor

- 40 billion operations/sec pixel processing pipeline

- 7 million transistors

- Integrated 250MHz Palette-DAC supporting up to
  1600x1200x24@85Hz

- 452 PBGA

- AGP 2X w/sideband

- 4-16MB SGRAM/SDRAM frame buffer

RIVA TNT BLOCK DIAGRAM

RIVA TNT

KEY FEATURES

Visually stunning interactive 3D

- Optimized Direct3D acceleration
- Complete DirectX 5.0 and DirectX 6.0 support
- 100% hardware triangle setup
- Twin texel (TNT) 32-bit graphics pipeline
  2 texture mapped, lit pixels per clock
  Single pass multi-texturing support
  	(DirectX 6.0 and OpenGL)
  	Square and non-square texture support
- TextureBlend support examples:
  	Multi-texture
  	Bump map
  	Texture modulation
  	Light maps
  	Reflection maps
  	Detail textures
  	Environmental maps
  	Procedural textures
- Backend blend
  	DirectX 5.0: 121 modes supported for source
  	and destination and alpha blending
  	32-bit ARGB rendering with destination alpha
  	Point sampled, Bilinear, Trilinear and 8-tap
  	Anisotropic filtering (better than
  	Trilinear Mip mapping)
- Per pixel perspective correct texture mapping
  	Fog
  	Light
  	Mip mapping
- 24-bit or 16-bit Z buffer (floating point or integer)
- 8-bit stencil buffer
- Anti-aliasing: full scene, order independent

MAINSTREAM FEATURE SUPPORT

- High performance 128-bit 2D Acceleration
  Accelerated primitives include BLT, indexed DIB
  color translation, transparent BLT, stretch BLT,
  points, lines, polylines, polygons, fills, patterns,
  arbitrary rectangular clipping and fast text rendering
  hardware font cache
  Pipeline optimized for multiple color depths
  including 32, 24, 16, 15 and 8-bits per pixel.
  Multi-buffering for smooth animation and
  video playback
- Fast 32-bit VGA/SVGA support
- 16MB, 8MB and 4MB frame buffer configurations
  SGRAM and SDRAM supported

Video Support

- Video Acceleration for DirectShow, MPEG 1/2 and Indeo®
  Planar 4:2:0 and packed 4:2:2 Color Space Conversion
  X and Y smooth up and down scaling with filtering
  DVD sub-picture alpha blend YUV
- NTSC and PAL TV output
- CCIR-656 video capture port

Interfaces

- Comprehensive AGPX support
- Bus mastering DMA PCI interface

Designed to WHQL compatibility standards

- Windows NT 3.5, 4.0 and 5.0 display drivers
- Windows 95 and 98 Display Driver, DirectDraw,
  Direct3D, DirectVideo, ActiveX
- Windows 3.x display drivers
- OpenGL ICD for Windows 95 and NT (passes compliance
  tests)

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