



Features

- 700 million transistors on 80nm fabrication process
- 512-bit GDDR3/4 memory interface
- Fully distributed design with 1024-bit internal ring bus for memory reads and writes
- Optimized for high performance HDR (High Dynamic Range) rendering at high display resolutions
- Unified Superscalar Shader Architecture
- 320 stream processing units
- Dynamic load balancing and resource allocation for vertex, geometry, and pixel shaders
- Common instruction set and texture unit access supported for all types of shaders
- Dedicated branch execution units and texture address processors
- 128-bit floating point precision for all operations
- Command processor for reduced CPU overhead
- Shader instruction and constant caches
- Up to 80 texture fetches per clock cycle
- Up to 128 textures per pixel
- Fully associative multi-level texture cache design
- DXTC and 3Dc+ texture compression
- Early Z test, Re-Z, Z Range optimization, and Fast Z Clear
- Lossless Z & stencil compression (up to 128:1)
- Lossless color compression (up to 8:1)
- 8 render targets (MRTs) with anti-aliasing support
- PCI Express x16 bus interface
- OpenGL 2.0 support

Full support for Microsoft® DirectX® 10

- Shader Model 4.0
- Geometry Shaders
- Stream Output
- Integer and Bitwise Operations
- Alpha to Coverage
- Constant Buffers
- State Objects
- Texture Arrays
- Dynamic Geometry Acceleration
- Programmable tessellation unit
- Accelerated geometry shader path for geometry amplification
- Memory read/write cache for improved stream output performance
- Multi-sample anti-aliasing (up to 8 samples per pixel)
- Up to 24x Custom Filter Anti-Aliasing (CFAA) for improved quality
- Adaptive super-sampling and multi-sampling
- Temporal anti-aliasing
- Super AA (CrossFire configurations only)
- All anti-aliasing features compatible with HDR rendering
- 2x/4x/8x/16x high quality adaptive anisotropic filtering modes (up to 128 taps per pixel)

Display Features

- Two integrated Dual link DVI display outputs
- Primary supports 18-, 24-, and 30-bit digital displays at all resolutions up to 1920x1200 (single-link DVI) or 2560x1600 (dual-link DVI)¹
- Secondary supports 18-, 24-, and 30-bit digital displays at all resolutions up to 1920x1200 (single-link DVI only)¹
- Each includes a dual-link HDCP encoder with on-chip key storage for high resolution playback of protected content²
- Two integrated 400 MHz 30-bit RAMDACs
- Each supports analog displays connected by VGA at all resolutions up to 2048x1536
- HDMI output support
- Supports all display resolutions up to 1920x1080¹
- Integrated HD audio controller with multi-channel (5.1) AC3 support, enabling a plug-and-play cable-less audio solution
- Integrated AMD Xilleon™ HDTV encoder
- Provides high quality analog TV output (component/S-video/composite)
- Supports SDTV and HDTV resolutions
- Underscan and overscan compensation
- MPEG-2, MPEG-4, DivX, WMV9, VC-1, and H.264/AVC encoding and transcoding
- Seamless integration of pixel shaders with video in real time
- VGA mode support on all display outputs

Avivo™ Video and Display Platform

- Dedicated unified video decoder (UVD) for H.264/AVC and VC-1 video formats
- High definition (HD) playback of both Blu-ray and HD DVD formats
- Hardware MPEG-1, MPEG-2, MPEG-4/DivX video decode acceleration
- Motion compensation and iDCT (inverse discrete cosine transform)
- Avivo Video Post Processor
- Color space conversion
- Chroma subsampling format conversion
- Horizontal and vertical scaling
- Gamma correction
- High Quality Video Post Processing
- Advanced vector adaptive per-pixel de-interlacing
- De-blocking and noise reduction filtering \
- Detail enhancement
- Inverse telecine (2:2 and 3:2 pull-down correction)
- Drive two displays simultaneously with independent resolutions, refresh rates, color controls and video overlays for each display
- Programmable piecewise linear gamma correction, color correction, and color space conversion
- Spatial/temporal dithering provides 30-bit color quality on 24-bit and 18-bit displays
- High quality pre- and post-scaling engines, with underscan support for all display outputs
- Content-adaptive de-flicker filtering for interlaced displays