



### ATI Radeon™ HD 3870 Mac & PC Edition - Specifications

- 666 million transistors on 55nm fabrication process
- PCI Express 2.0 x16 bus interface
- 256-bit GDDR3/GDDR4 memory interface
- Ring Bus Memory Controller
  - Fully distributed design with 512-bit internal ring bus for memory reads and writes
- 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
  - High resolution texture support (up to 8192 x 8192)
  - Fully associative texture Z/stencil cache designs
  - Double-sided hierarchical Z/stencil buffer
  - 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
  - Physics processing support
- Dynamic Geometry Acceleration
  - High performance vertex cache
  - Programmable tessellation unit
  - Accelerated geometry shader path for geometry amplification
  - Memory read/write cache for improved stream output performance
- Anti-aliasing features
  - Multi-sample anti-aliasing (2, 4, or 8 samples per pixel)
  - Adaptive super-sampling and multi-sampling
  - Temporal anti-aliasing
  - Gamma correct
  - All anti-aliasing features compatible with HDR rendering
- Texture filtering features
  - 2x/4x/8x/16x high quality adaptive anisotropic filtering modes (up to 128 taps per pixel)
  - 128-bit floating point HDR texture filtering
  - Bicubic filtering
  - sRGB filtering (gamma/degamma)
  - Percentage Closer Filtering (PCF)
  - Depth & stencil texture (DST) format support
  - Shared exponent HDR (RGBE 9:9:9:5) texture format support
- OpenGL 2.0 support
  - 32-bit floating point texture filtering
- ATI Avivo™ HD Video and Display Platform<sup>1</sup>
  - Dedicated unified video decoder (UVD) for H.264/AVC and VC-1 video formats
- Hardware MPEG-1, MPEG-2, and DivX video decode acceleration
  - Motion compensation and IDCT
- ATI Avivo Video Post Processor
  - Color space conversion
  - Chroma subsampling format conversion
  - Horizontal and vertical scaling
  - Gamma correction
  - 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)
  - Bad edit correction

- Two independent display controllers
  - Drive two displays simultaneously with independent resolutions, refresh rates, color controls and video overlays for each display
  - Full 30-bit display processing
  - 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
  - Fast, glitch-free mode switching
  - Hardware cursor
- Two integrated dual-link DVI display outputs
  - Each supports 18-, 24-, and 30-bit digital displays at all resolutions up to 1920x1200 (single-link DVI) or 2560x1600 (dual-link DVI)<sup>2,3</sup>
- 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 1920x1080
- Integrated AMD Xileon™ HDTV encoder
  - Provides high quality analog TV output (component/S-video/composite)
  - Supports SDTV and HDTV resolutions
  - Underscan and overscan compensation
- Seamless integration of pixel shaders with video in real time
- VGA mode support on all display outputs
- ATI PowerPlay™
  - Advanced power management technology for optimal performance and power savings
  - Performance-on-Demand
    - Constantly monitors GPU activity, dynamically adjusting clocks and voltage based on user scenario
    - Clock and memory speed throttling
    - Voltage switching
    - Dynamic clock gating
  - Central thermal management – on-chip sensor monitors GPU temperature and triggers thermal actions as required
- Visit <http://ati.amd.com/products/radeonhd3800/specs.html> to view the PC specifications