



RADEON[®] X800 SERIES

Massive Performance Gives Rise to High-Definition (HD) Gaming

The RADEON[®] X800's graphics technology set a new standard in graphics performance and visual realism. With up to 16 pipelines, higher clock speeds and breakthrough image enhancement technology, RADEON[®] X800 Graphics Technology introduced a whole new gaming category called High-Definition Gaming.



the ultimate visual experience

GROUND-BREAKING SPEED

The RADEON[®] X800 series produces frame rates that surpass all previous graphic processors. Based on a radically new architecture, ATI has combined the latest semiconductor manufacturing process with ultra-fast and efficient GDDR3 memory to produce extreme data rates and unbelievable acceleration in a quiet and cool single-slot solution. The result is an incredibly smooth and responsive high-definition gaming experience.

UNPRECEDENTED IMAGE QUALITY

The RADEON[®] X800 series creates a totally new high-definition experience for the avid gamer by maximizing performance and image quality. ATI's revolutionary 3Dc[™] image enhancement technology brings characters to life and makes the most detailed scenery more realistic than ever before. 3Dc[™] is destined to become the industry standard for supporting more complex, high-definition visual effects in real time.

WORLD'S MOST ADVANCED 3D ARCHITECTURE

The RADEON[®] X800 series features SMARTSHADER[™] HD, the most advanced pixel shader engine ever offered. With up to 16 parallel pixel pipelines, 6 programmable vertex shader pipelines and an overall capability of up to 200 GigaFLOPS, the RADEON[®] X800 series delivers the most advanced high-definition 3D animation for the ultimate

intense and interactive game play. The RADEON[®] X800 series also offers unparalleled DirectX[®] 9.0 and OpenGL[®] shader support to ensure current and upcoming games look and play brilliantly, especially in high-definition.

CUTTING EDGE VIDEO TECHNOLOGY

With VIDEOSHADER[™] HD, the RADEON[®] X800 series takes advantage of its advanced shader processing engine for user programmable video effects, video quality enhancement, and encoding and decoding of many video standards, including MPEG1/2/4, Real Media, DivX and WMV9. The RADEON[®] X800 series also supports the latest high-definition and wide-display formats, giving users bigger and more vivid movie, gaming and Internet experiences.

YOUR CHOICE - PCI EXPRESS[™] OR AGP

The RADEON[®] X800 series is available for both AGP and PCI Express[®] technologies. The single-slot AGP card puts hardcore gamers in complete control of even the most demanding game titles, while the incredibly fast PCI Express[®] models offer a future-proof solution to support current and upcoming game titles, operating systems and multimedia applications.



For more information visit ati.com



RADEON X800 SERIES

TECHNOLOGY FEATURES

- 160 million transistors
- Up to sixteen parallel pixel pipelines
- Six parallel vertex processing engines
- 256-bit quad-channel GDDR3 memory interface
- AGP 8X or PCI Express® x16 lane native support

SMARTSHADER™ HD

- Support for Microsoft® DirectX® 9.0 programmable vertex and pixel shaders in hardware
- DirectX 9.0 Vertex Shaders
 - Vertex programs up to 65,280 instructions with flow control
 - Single cycle trigonometric operations (SIN & COS)
- DirectX® 9.0 Extended Pixel Shaders
 - Up to 1,536 instructions and 16 textures per rendering pass
 - 32 temporary and constant registers
 - Facing register for two-sided lighting
 - 128-bit, 64-bit & 32-bit per pixel floating point color formats
 - Multiple Render Target (MRT) support
- Complete feature set also supported in OpenGL® via extensions

SMOOTHVISION™ HD

- 2x/4x/6x Anti-Aliasing modes
 - Sparse multi-sample algorithm with gamma correction, programmable sample patterns, and centroid sampling
 - Lossless Color Compression (up to 6:1) at all resolutions, including widescreen HDTV resolutions
 - Temporal Anti-Aliasing
- 2x/4x/8x/16x Anisotropic Filtering modes
 - Up to 128-tap texture filtering
 - Adaptive algorithm with bilinear (performance) and trilinear (quality) options

3Dc™

- High quality 4:1 Normal Map Compression
- Works with any two-channel data format

HYPER Z™ HD

- 3-level Hierarchical Z-Buffer with Early Z Test
- Lossless Z-Buffer Compression (up to 48:1)
- Fast Z-Buffer Clear
- Z Cache optimized for real-time shadow rendering
- Optimized for performance at high display resolutions, including widescreen HDTV resolutions

VIDEOSHADER™ HD

- Seamless integration of pixel shaders with video in real time
- FULLSTREAM™ video de-blocking technology for Real, DivX, and WMV9 formats
- VIDEOSOAP™ noise removal filtering for captured video
- MPEG1/2/4 decode and encode acceleration
 - DXVA Support
 - Hardware Motion Compensation, iDCT, DCT and color space conversion
- All-format DTV/HDTV decoding
- Adaptive Per-Pixel De-Interlacing and Frame Rate Conversion (temporal filtering)

DISPLAY FEATURES

- Dual integrated display controllers
- Dual integrated 10 bit per channel 400 MHz DACs
- Integrated 165 MHz TMDS transmitter (DVI 1.0 HDMI compliant and HDCP ready)
- Integrated TV Output support up to 1024x768 resolution
- YPrPb component output for direct drive of HDTV displays
- Single and dual link external TMDS transmitter support for high resolution and/or multi-monitor DVI configurations
- Compatible with ATI's THEATER™ video decode and capture devices for VIVO (Video Input / Video Output) configurations

ADDITIONAL FEATURES

- Windows® Logo Program compliant
- CATALYST™ Software Suite

2D DISPLAY MODES

Resolutions, colors and maximum refresh rates (Hz) in 256, 65K or 16.7M colors

DISPLAY MODES:

Resolutions, colors and maximum refresh rates (Hz) for 256, 65K and 16.7M colors

Monitor Resolution	Hz
640x480	200
800x600	200
1024x768	200
1152x864	200
1280x1024	160
1600x1200	120
1920x1080* 16:9	120
1920x1200	100
1920x1440	90
2048x1536	85

MAXIMUM 3D RESOLUTIONS

65K colors	2048x1536
16.7M colors	2048x1536

* 16:9 aspect ratio monitors are supported on 1920x1080 and 848x480 on Windows® XP; Windows® 2000 and Windows® ME. The complete list of resolutions depends on the driver version and operating system. NOTE: resolutions are limited by the performance of the attached monitor.

COMPARE THE X800 FAMILY OF PRODUCTS

PIXEL PIPELINES	GEOMETRY TRANSFORM RATE	GIGAFLOPS	MEMORY BANDWIDTH	CORE SPEED/MEMORY SPEED	PIXEL FILL RATE
RADEON® X800 XT PLATINUM EDITION 256MB					
16	780 million vertices/sec.	200	35.8 Gigabytes/sec.	520e/560m MHz	8.3 Gigapixels/sec.
RADEON® X800 XT 256MB					
16	750 million vertices/sec.	192	32 Gigabytes/sec.	500e/500m MHz	8 Gigapixels/sec.
RADEON® X800 XL 256MB					
16	600 million vertices/sec.	154	31.4 Gigabytes/sec.	400e/490m MHz	6.4 Gigapixels/sec.
RADEON® X800 PRO 256MB					
12	713 million vertices/sec.	145	28.8 Gigabytes/sec.	475e/450m MHz	5.7 Gigapixels/sec.
RADEON® X800 256MB					
12	588 million vertices/sec.	120	22.4 Gigabytes/sec.	392e/350m MHz	4.7 Gigapixels/sec.
RADEON® X800 SE 256MB					
8	683 million vertices/sec.	97	25.6 Gigabytes/sec. (AGP) 22.5 Gigabytes/sec. (PCI-EXPRESS™)	425e/400m MHz (AGP) 425e/350m MHz (PCI-EXPRESS™)	3.4 Gigapixels/sec.



ATI TECHNOLOGIES INC.
1 Commerce Valley Drive East
Markham, Ontario, Canada L3T 7X6
Telephone: (905) 882-2600
Facsimile: (905) 882-2620
www.ati.com

ATI TECHNOLOGIES SYSTEMS CORP.
4555 Great America Parkway,
Suite 501 Santa Clara, CA 95054
Telephone: (408) 572-6500
Facsimile: (408) 572-6305

ATI TECHNOLOGIES (EUROPE) GMBH
Keltnering 13
D-82041 Oberhaching, Germany
Telephone: +49 89 665 15-0
Facsimile: +49 89 665 15-300

ATI TECHNOLOGIES (JAPAN) INC.
Kojimachi Nakata Bldg 4F
5-3 Kojimachi, Chiyoda-Ku
Tokyo 102-0083, Japan
Telephone: +81 35275-2241
Facsimile: +81 35275-2242

ATI TECHNOLOGIES LTD.
9F, No. 2, Sec. 3, Min-Chuan E. Road,
Taipei 104, Taiwan, R.O.C.
Telephone: 886-2-2516-8333