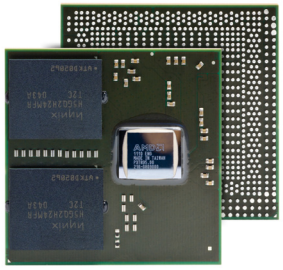
AMD Radeon™ E6460 Embedded GPU

PRELIMINARY INFORMATION



GPU AND MEMORY IN ONE PACKAGE

> Multi-chip module BGA

> 64-bit wide, 512 MB GDDR5

DESKTOP-LEVEL DISCRETE 3D GRAPHICS

> Microsoft® DirectX® 11 capable

> 3DMark™ Vantage (P) score of 2195[4]

OUTSTANDING VIDEO FEATURES

> 3rd generation video decoder

> H.264, VC-1, MPEG-2

> Blu-ray & Stereo 3D

> Dual HD decode & PiP

FLEXIBLE AND UPGRADABLE

> One system design for both AMD Radeon™ E6460 & E6760 GPUs

AMD EYEFINITY TECHNOLOGY

> Up to four display outputs

EXTENDED AVAILABILITY

> Five year supply[5]

> Dedicated support

Entry-Level Discrete GPU Enables 3D Graphics and HD Video with Support for Multiple Displays

Exciting 3D Graphics and HD Multimedia for Value Conscious Embedded Systems

The AMD Radeon™ E6460 embedded discrete graphics processor unit (GPU) is AMD's next generation entry-level embedded graphics processor, enabling rich 3D graphics and outstanding HD multimedia. The advanced 3D graphics engine and programmable shader architecture support Microsoft® DirectX® 11 technology and OpenGL 4.1 for superior graphics rendering. The third generation unified video decoder enables dual HD decode of H.264, VC-1, MPEG4 and MPEG2 compressed video streams. Unlock a superior entertainment experience for casino gaming and arcade systems with AMD Eyefinity[1], AMD App Acceleration[2] and AMD HD3D[3] technologies.

Multi-Display Support with AMD Eyefinity Technology

Supporting up to four displays with AMD Eyefinity multi-display technology, the AMD Radeon™ E6460 GPU is ideal for mainstream digital signage systems. Enhanced flexibility is provided with integrated analog RGB, single/dual-link DVI, single/dual-link LVDS, HDMI™ 1.4a, DisplayPort 1.1a, and DisplayPort 1.2 interfaces[9]. Leveraging the higher link speeds and multi stream transport capabilities of DisplayPort 1.2, manufacturers can deliver multi-display systems at a low cost with simplified display connectivity.

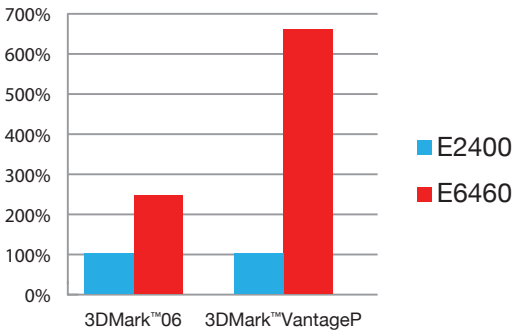
One System Design, Two Solutions

Speed time to market, reduce inventory costs, and enable multiple product categories. The AMD Radeon™ E6460 GPU ball grid array (BGA) is a subset of the AMD Radeon™ E6760 GPU BGA enabling embedded system designers to develop one system for both the AMD Radeon™ E6460 GPU and the high-performance AMD Radeon™ E6760 GPU.

Designed to Perform, Engineered to Lead, Built to Win

AMD understands the unique requirements of the embedded market. Building on a proven track record of customer-centric innovation, AMD offers the AMD Radeon™ E6460 embedded GPU with a planned five year product life cycle[5]. With the graphics memory integrated onto the same BGA package, the AMD Radeon™ E6460 GPU saves development time plus AMD manages memory device obsolescence. The performance, flexibility, and easy design of the AMD Radeon™ E6460 GPU provides system designers with an exciting and innovative solution for their embedded graphics applications.

Relative Performance:
AMD Radeon™ E6460 vs E2400 GPU[4]
(higher is better)

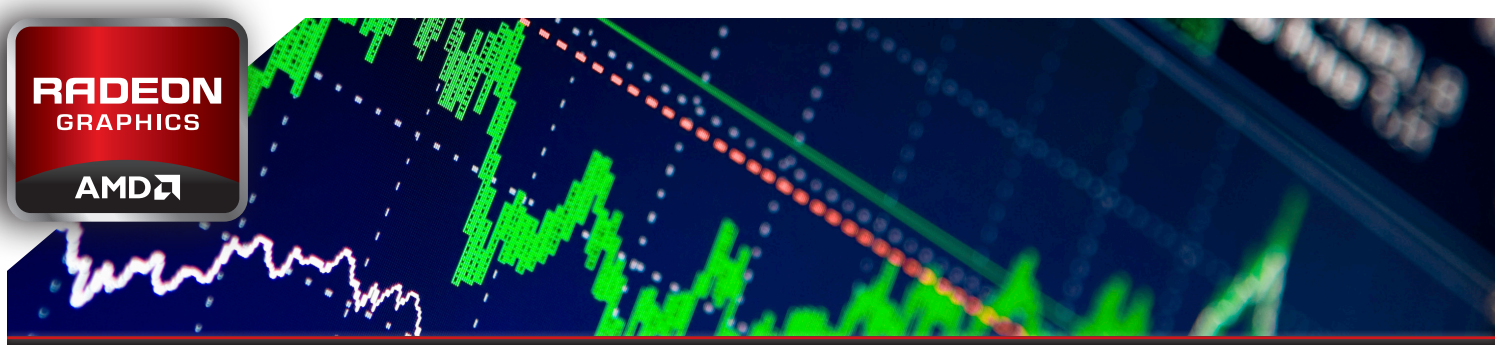


AMD Embedded Solutions

AMD Accelerated Parallel Processing TECHNOLOGY

AMD Eyefinity MULTI-DISPLAY TECHNOLOGY

AMD HD3D TECHNOLOGY



AMD RADEON™ E6460 EMBEDDED GPU

AMD Embedded GPU Comparison	AMD Radeon™ E6460	AMD Radeon™ E6760
Package Dimensions	GPU + memory, 33 mm x 33 mm BGA	GPU + memory, 37.5 mm x 37.5 mm BGA
Thermal Design Power (TDP)[6]	~20W[6] (est)	35W[7]
Graphics Processing Unit		
Process Technology	40 nm	40 nm
Graphics Engine Operating Frequency (max)	600 MHz	600 MHz
CPU Interface	PCI Express® 2.1 (x1, x2, x4, x8, x16)	PCI Express® 2.1 (x1, x2, x4, x8, x16)
Shader Processing Units	2 SIMD engines x 80 processing elements = 160 shaders	6 SIMD engines x 80 processing elements = 480 shaders
Floating Point Performance (single precision, peak)	192 GFLOPs	576 GFLOPs
3DMark™ VantageP Score[4]	2195	5870
Display Engine	AMD App Acceleration, AMD Eyefinity & AMD HD3D technologies	AMD App Acceleration, AMD Eyefinity & AMD HD3D technologies
DirectX® capability	DirectX® 11	DirectX® 11
Shader Model	Shader Model 5.0	Shader Model 5.0
OpenGL	OpenGL 4.1	OpenGL 4.1
Compute	AMD App Acceleration[2], OpenCL™ 1.1[8], DirectCompute 11	AMD App Acceleration[2], OpenCL™ 1.1[8], DirectCompute 11
Unified Video Decoder (UVD)	UVD3 for H.264, VC-1, MPEG-2, MPEG-4 part 2 decode	UVD3 for H.264, VC-1, MPEG-2, MPEG-4 part 2 decode
Internal Thermal Sensor	•	•
Memory		
Operating Frequency (max)	800 MHz / 3.2 Gbps	800 MHz / 3.2 Gbps
Configuration, type	64-bit wide, 512 MB, GDDR5, 25.6 GB/s	128-bit wide, 1 GB, GDDR5, 51.2 GB/s
Display Interfaces[9]		
Analog RGB	1x Triple 10-bit DAC, 400 MHz	1x Triple 10-bit DAC, 400 MHz
Analog TV	NA	NA
Single / Dual-Link DVI	4x Single-Link DVI / 1x Dual-Link DVI	4x Single-Link DVI / 1x Dual-Link DVI
DisplayPort 1.1a	2x	2x
DisplayPort 1.2	3x	4x
Single / Dual-Link LVDS	1 x Single-Link / Dual-Link	1 x Single-Link / Dual-Link
HDMI™	1x HDMI 1.4a	1x HDMI 1.4a
Number Independent Displays (max)	Up to 2 display outputs from VGA, Single / Dual-Link DVI, Single / Dual-Link LVDS, HDMI 1.4a, DisplayPort 1.1a / 1.2 + up to 2 display outputs from DisplayPort 1.1a / 1.2[10]	Up to 2 display outputs from VGA, Single / Dual-Link DVI, Single / Dual-Link LVDS, HDMI 1.4a, DisplayPort 1.1a / 1.2 + up to 4 display outputs from DisplayPort 1.1a / 1.2[10]
HD Audio Controller (Azalia)	1x	1x
HDCP Keys	4x	6x
DVO	12-bit DDR or 24-bit SDR / DDR	12-bit DDR or 24-bit SDR / DDR
Software Support		
Windows® XP / Windows XP Embedded	•	•[11]
Windows Vista®	•	•
Windows® 7 / Windows 7 Embedded	•	•
Linux® (x86)	•	•

1. AMD Eyefinity technology can support multiple displays limited by display output clock dependencies. Microsoft® Windows® 7, Windows Vista®, or Linux® is required in order to support more than two displays. SLS ("Single Large Surface") functionality requires an identical display resolution on all configured displays.
2. AMD App Acceleration is a set of technologies designed to improve video quality and enhance application performance. Full enablement of some features requires support for OpenCL™ or DirectCompute (including AMD's Universal Video Decoder (UVD)). Not all products have all features and full enablement of some capabilities and may require complementary products.
3. AMD HD3D is a technology designed to enable stereoscopic support for 3D graphics and video. Additional hardware (e.g., 3D-enabled panels, 3D-enabled glasses/emitter, Blu-ray 3D drive) and/or software (e.g., Blu-ray 3D discs, 3D middleware, games) are required for the enablement of stereoscopic 3D.
4. System configuration: 1280x1024, E2400: 600e/700m, 128MB GDDR3, E6460: 600e/800m, 512MB GDDR5, E6760: 600e/800m, 1 GB GDDR5, AMD: AMD Athlon™ II X4 620 @ 2.6GHz, MSI Gigabyte GA-MA770T-UD3P, Corsair XMS3 4GB (2x2GB) 1333MHz 9-9-9-24 (TW3X4G1333C9A G), Windows® 7 64-bit Ultimate
5. Part availability is planned for 5 years from date of announcement and subject to change without notice.
6. System configuration: TBD
7. System configuration: 3DMark™ 03, AMD "Shiner", AMD Athlon™ 64 X2 dual-core 4400+, 2.2GHz, Hynix 1024MB GDDR5, Windows® 7 Ultimate.
8. OpenCL™ 1.1 certification expected.
9. Not all display interfaces available at same time. Maximum resolution dependent on link bit-rate and available memory bandwidth. AMD Embedded Catalyst™ software driver version 8.81 or higher required to support AMD Eyefinity multi-display technology. AMD Eyefinity multi-display technology has certain restrictions on supported display interfaces.
10. Two internal PLLs + an integrated DisplayPort reference clock can support (1) two legacy display outputs + two DisplayPort outputs, (2) one legacy display output + three DisplayPort outputs or (3) four DisplayPort outputs. Legacy display output includes VGA, single / dual-link DVI, single / dual-link LVDS and HDMI 1.4a.
11. Not all features supported by Windows® XP (e.g., AMD Eyefinity technology not supported).

Contact your local AMD distributor for ordering information. OPN: 100-CG2261