Product Brief: AMD High-Performance Embedded GPUs

The Optimal Balance of Processing Performance, Power Efficiency, and Cost Effectiveness

Product Overview

AMD Radeon™ high-performance embedded discrete GPUs provide exceptional graphics performance for single and multi display systems without compromising power consumption or cost. Ideally suited for portable medical imaging devices, digital signage installations, and casino and arcade gaming systems, AMD high-performance embedded GPUs support a broad range of performance and power requirements that can meet and surpass the needs of most mainstream embedded applications.

Key Benefits

Excellent Performance-Per-Watt – Enable 4K video encode/decode and 3D graphics at efficient thermal design power (TDP) profiles as low as 37W. Create crisp, eye-catching visual experiences while conserving power.

Multi-display Immersion – Support up to six displays with a single small form factor module. Enable ultra-immersive, multi-display visual experiences and advanced 4K H.265 encode and decode multimedia capabilities for digital signage and casino and arcade gaming systems.

Compact Form Factor – Preserve valuable board space in small form factor systems like wall-mounted and/or mobile digital signage displays and multimedia players. Free up real estate for additional value-add components.

Long Product Support – Get optimal value out of designs by reducing engineering iteration cycles. Particularly valuable for designers of products in highly regulated industries, including medical imaging and casino gaming.

AMD Embedded Radeon™ E9260 Series (MXM and PCIe)

AMD Embedded Radeon™ E8870 Series (MXM and PCIe)

AMD Embedded Radeon™ E8860 Series (MCM, MXM, and PCIe)

Key Markets:

- **Digital Gaming**
- **Digital Signage & Retail**
- **Medical Imaging**

Product Details

AMD Embedded Radeon™ E9260 MXM Module

- Polaris Architecture
- MXM 3.x Type A
- 14 Compute Units; 2.5 TFLOPs
- 4GB GDDR5 Memory; 128-bit wide
- <50W Power
- Passive heatsink and fansink options
- x8 PCIe® Gen 3
- 4K HEVC/H.2651 and AVC/H.264 HW decode and encode support
- DP 1.3 and/or HDMI 2.0
- Support for five outputs
- Five year longevity

AMD Embedded Radeon™ E9260 PCIe Module

- Polaris Architecture
- Quad DP 1.3 low profile, half length, single slot
- 14 Compute Units; 2.5 TFLOPs
- 4GB GDDR5 Memory; 128-bit wide
- <50W Power
- Passive heatsink and fansink options
- x8 PCIe® Gen 3
- 4K HEVC/H.2651 and AVC/H.264 HW decode and encode support
- DP 1.3 and/or HDMI 2.0
- Support for five outputs
- Five year longevity

AMD Embedded Radeon™ E8870 MXM Module

- Latest-gen performance boost Type B Mobile PCI Express® Module (MXM)
- 12 Compute Units; 1.5 TFLOPS
- 4GB GDDR5 Memory; 128-bit wide
- <75W Thermal Design Power
- Graphics Clock 1000MHz
- Memory Clock 1500MHz
- Dual HD decode of H.264, VC-1, MPEG-4, and MPEG-2
- Support for six outputs
- Microsoft DirectX® 12, OpenGL 4.5, and OpenCL™ 2.0 capable

AMD Embedded Radeon™ E8870 PCIe Module

- PC add-in graphics board with 4 DisplayPort outputs
- 12 Compute Units ; 1.5 TFLOPS
- 4GB GDDR5 Memory; 128-bit wide
- <75W Thermal Design Power
- Graphics Clock 1000MHz
- Memory Clock 1500MHz
- Dual HD decode of H.264, VC-1, MPEG-4, and MPEG-2
- Four outputs of DisplayPort 1.2 and/or HDMI® 1.4 (thru passive adapter)
- AMD Eyefinity technology to drive up to six displays using MST hubs
- Microsoft DirectX® 12, OpenGL 4.5, and OpenCL™ 2.0 capable

AMD Embedded Radeon™ E8860 GPU MCM Module

- Graphics Core Next (GCN) Architecture
- 10 Compute Units; 768 GFLOPS
- 2GB GDDR5 Memory; 128-bit wide
- <37W Thermal Design Power
- Graphics Clock 625-MHz
- Memory Clock 1125-MHz
- Dual HD decode of H.264, VC-1, MPEG-4 and MPEG-2
- Support for up to six displays
- Microsoft DirectX® 12, OpenGL 4.5, and OpenCL™ 1.2 capable

OPN	Model	Output	Cooling
100-K00248	AMD Embedded Radeon™ E9260 MXM Type A	5 x DisplayPort / HDMI® / DVI	Heatsink
100-K00195	AMD Embedded Radeon™ E9260 MXM Type A	5 x DisplayPort / HDMI® / DVI	N/A
100-438158	AMD Embedded Radeon™ E9260 PCIe LP Board	4 x mini DisplayPort	Fansink
100-438275	AMD Embedded Radeon™ E9260 PCIe Board	4 x mini DisplayPort	Fansink
100-K00246	AMD Embedded Radeon™ E8870 MXM Type B	6 x DisplayPort / HDMI® / DVI	N/A
100- 438204	AMD Embedded Radeon™ E8870 PCIe Board	4 x DisplayPort	Fansink
100-CG2803	AMD Embedded Radeon™ E8860 MCM (GPU)	6 x DisplayPort / HDMI® / DVI	N/A
100-K00213	AMD Embedded Radeon™ E8860 MXM Type A	6 x DisplayPort / HDMI® / DVI	Fansink
100-K00214	AMD Embedded Radeon™ E8860 MXM Type A	6 x DisplayPort / HDMI® / DVI	Heatpipe

OPN	Model	Output	Cooling
100-K00217	AMD Embedded Radeon™ E8860 MXM Type A	5 x DisplayPort / HDMI® / DVI	Fansink
100-K00216	AMD Embedded Radeon™ E8860 MXM Type A Module	5 x DisplayPort / HDMI® / DVI	Heatpipe
100-438208	AMD Embedded Radeon™ E8860 PCIe Board	2 x DVI + mini DisplayPort	Fansink
100-438209	AMD Embedded Radeon™ E8860 PCIe Board	2 x DVI + mini DisplayPort	Heatsink
100-438215	AMD Embedded Radeon™ E8860 PCIe Board	5 x mini DisplayPort	Fansink
100- 438214	AMD Embedded Radeon™ E8860 PCIe Board	5 x mini DisplayPort	Heatsink
100-438211	AMD Embedded Radeon™ E8860 PCIe Board	4 x mini DisplayPort	Fansink
100-438212	AMD Embedded Radeon™ E8860 PCIe Low Power Board	4 x mini DisplayPort	Heatsink

AMD.com/embedded

1. Performance comparison is based on 3DMark® 11 (Performance) benchmark scores. The AMD E8870MXM module scored 5282 and the Nvidia GTX 750Ti scored 3555. The AMD E8870MXM clock speed is 1000 MHz; the module contains 4GB of GDDR5 video RAM. Testing of the Nvidia GTX 960 was done using a Zotac GTX 750Ti PCIe add-in card with 2GB of GDDR5 video RAM. This card clocks the GTX 750Ti at 1033 MHz (1111 MHz boost). The host system used in testing for both products was an AMD Bettong motherboard based on the AMD Merlin Falcon processor (nominal clock speed of 2.1 GHz). The Bettong board contains 8GB of 1066MHz DDR3 DRAM system memory. The system mass storage device used for the test was a Samsung EVO 850 250GB SSD Drive. The graphics driver level was 15.200.0.0 and the OS was Windows® 8.1 Professional. EMB-129

2. 6-display support available with most of the AMD Embedded Radeon™ E8860 Product Family and the AMD Embedded Radeon™ E8870MXM Module. The AMD Embedded Radeon™ E8870PCIe Module supports up to four displays natively, but can support up to six using MST hubs.

3. 5-year support offered on most AMD Embedded discrete GPUs, depending upon the specific AMD product. Please contact your AMD representative for more details.

4. Discrete AMD Radeon™ and FirePro™ GPUs based on the Graphics Core Next architecture consist of multiple discrete execution engines known as a Compute Unit ("CU"). Each CU contains 64 shaders ("Stream Processors") working in unison. GD-78

5. AMD Eyefinity technology works with applications that support non-standard aspect ratios, which is required for panning across multiple displays. AMD Eyefinity technology can support up to four displays using a single enabled AMD R-Series APU or up to six displays using a single enabled AMD graphics card with Windows Vista or Windows 7 operating systems – the number and type of displays may vary by board design. Some implementations may require DisplayPort 1.2 multi-streaming technologies with compatible monitors and/or hubs. SLS ("Single Large Surface") functionality requires an identical display resolution on all configured displays.