PRODUCT OVERVIEW

The 2nd Generation AMD Embedded R-Series accelerated processing unit (APU) delivers breakthrough graphics performance and power efficiency for a new generation of embedded systems designed to provide ultra-immersive HD multimedia experiences and parallel processing compute performance. Harnessing the processing power of AMD’s “Steamroller” CPU core and a new graphics core based on the AMD Radeon™ HD 9000 platform, the AMD R-Series APU offers next-generation performance-per-watt compute efficiency in the x86 product category by allowing system designers to take advantage of Heterogeneous System Architecture (HSA).

The high-performance CPU and GPU cores within the 2nd Generation AMD Embedded R-Series APU can be allocated to the best suited compute tasks by utilizing HSA. As noted below, this enables outstanding system performance and multimedia interactivity, superior battery life, and small, sleek system form factors for a wide range of graphics and compute-intensive embedded applications including embedded gaming, digital signage, medical imaging, and more.

SKY HIGH PERFORMANCE AT LOW POWER

2nd Generation AMD R-Series APUs deliver up to 66% more compute performance and up to 55% more 3D graphics performance than previous generation AMD Embedded R-Series APUs. Compared to Intel Haswell Core-i CPUs with 35W or lower thermal design power (TDP), the new AMD R-Series APUs provide up to 46% more compute performance, and up to 44% more 3D graphics performance.
BREATHTAKING GRAPHICS AND
MULTIDISPLAY IMMERSION

2nd Generation AMD Embedded R-Series APUs enable stunningly crisp 3D, 4K, and HD video content and offer support for up to four independent displays (4096 x 2160 resolution per display output). The AMD Dual Graphics® configuration allows you to combine the power of the 2nd Generation AMD R-Series APU with an AMD Embedded Radeon™ E8860 discrete GPU to provide up to 64% more 3D graphics performance than a standalone 2nd Generation AMD R-Series APU. AMD Eyefinity technology allows the AMD R-Series APUs to drive multiple displays simultaneously as a single large surface.6

ADDITIONAL KEY BENEFITS

• Available in dual-core and quad-core “Steamroller” CPU configurations with up to 4 MBytes of shared L2 cache.

• Includes support for DirectX® 11.1, OpenGL 4.2, and AMD’s Mantle for the latest game development advancements. Offers dual-channel DDR3 support and error-correction code (ECC) memory support for high integrity applications.

• Features a new audio coprocessor that enables low-latency audio signal processing for crisper sound and audio effects.

• Enables hardware accelerated video encode and decode using Unified Video Decode (UVD) 4.2 and Video Compression Engine (VCE) 2.0.

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### Model# | OPN | # x86 Cores | # GPU CU | TDP | L2 Cache (MBytes) | CPU Frequency (GHz) Max/Base | GPU (MHz) Max/Base | Memory | Max DDR3 Rate | CTDP Range
---|---|---|---|---|---|---|---|---|---|---
RX-427BB | RE427BDCGH44JA | 4 | 8 | 35W | 4 | 3.6/2.7 | 686/600 | DDR3 | 2133 | 30W-35W
RX-425BB | RE425BDCGH44JA | 4 | 6 | 35W | 4 | 3.4/2.5 | 654/576 | DDR3 | 1866 | 30W-35W
RX-225FB | RE225FECCH23JA | 2 | 4 | 17W | 1 | 3.0/2.2 | 533/464 | DDR3 | 1600 | 15W-17W
RX-427NB | RE427NDGH44JA | 4 | 0 | 35W | 4 | 3.6/2.7 | - | DDR3 | 2133 | 30W-35W
RX-219NB | RE219NECH23JA | 2 | 0 | 17W | 1 | 3.0/2.2 | - | DDR3 | 1600 | 15W-17W

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1. The AMD RX-427BB scored 76.5 and AMD R-Series 464L scored 46.1, when running Benchmark31 1.0 benchmark. The performance delta of 66% was calculated based on RX-427BB’s performance score of 76.5 and R-464L’s performance score of 46.1.

2. The AMD RX-427BB scored 2051 and AMD R-Series 464L scored 1326, when running 3DMark® 11P benchmark. The performance delta of 55% was calculated based on RX-427BB’s performance score of 2051 and R-464L’s performance score of 1326.

3. The AMD RX-427BB scored 76 and Intel Haswell Core i7-4765T scored 52, when running 3DMark® 11P benchmark. The performance delta of 46% was calculated based on RX-427BB’s performance score of 76 and Core i7-4765T’s performance score of 52. The AMD Bald Eagle RX-427BB used an AMD Bulldozer motherboard with 8GB DDR3 SO-DIMM memory and 256GB SanDisk HDD. The Core i7-4765T used a Lenovo ThinkCentre 910 with 4GB DDR3 SO-DIMM memory and 128GB Crucial M4 SSD. Both systems ran Windows® 7 Ultimate. EMR: 94

4. The AMD RX-427BB scored 2051 and Intel Haswell Core i7-4765T scored 1424, when running 3DMark® 11P benchmark. The performance delta of 44% was calculated based on RX-427BB’s performance score of 2051 and Core i7-4765T’s performance score of 1424. The AMD Bald Eagle RX-427BB used an AMD Bulldozer motherboard with 8GB DDR3 SO-DIMM memory and 256GB SanDisk HDD. The Core i7-4765T used a Lenovo ThinkCentre 910 with 4GB DDR3 SO-DIMM memory and 128GB Crucial M4 SSD. Both systems ran Windows® 7 Ultimate. EMR: 94

5. The AMD RX-427BB (configured at 35W) scored 2,434 and AMD R-Series 464L scored 2,332 based on a geometric mean of various industry benchmarks, comprised of 3DMark® 06, 3DMark® 11P, Passmark v7, Pov-ray v3.7, EEMBC CoreMark MT 1.0, and Benchmark31 1.0. The performance-per-watt delta was calculated by dividing the configured RX-427BB’s performance-per-watt score (2,434/35W) by the RX-427BB’s performance-per-watt score (2,332/35W). The AMD Bald Eagle RX-427BB used an AMD Bulldozer motherboard with 8GB DDR3 SO-DIMM memory and 256GB SanDisk HDD. The Core i7-4765T used a Lenovo ThinkCentre 910 with 4GB DDR3 SO-DIMM memory and 128GB Crucial M4 SSD. Both systems ran Windows® 7 Ultimate. EMR: 94

6. AMD Dual Graphics technology combines the 3D graphics rendering resources of the APU’s discrete-class graphics processor with the discrete graphics processor to accelerate the Microsoft® DirectX® function for software applications using DirectX® 11 or Direct 11 technology.

7. The AMD RX-427BB scored 2051 and the AMD Radeon™ E8860 paired with RX-427BB at dual-graphic mode scored 2,359 when running 3DMark® 11P benchmark. The AMD Bald Eagle RX-427BB used an AMD Bulldozer motherboard with 8GB DDR3 SO-DIMM memory and 256GB SanDisk HDD. The AMD Radeon E8860 used an AMD DFI F512 motherboard with 8GB DDR3 memory, 64GB Crucial M4 SSD, and RX-427BB. The system ran Windows® 7 Ultimate. EMR: 97

8. 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 4 displays using a single enabled AMD R-series APU or up to 6 displays using a single enabled AMD R-series APU with the RX-427BB. AMD Eyefinity technology requires an identical display resolution on all configured displays.

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