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AMD Launches Ryzen Embedded V3000 Series Processors Delivering New Levels of Performance and Power Efficiency for “Always-On” Storage and Networking

New processors offer up to 124% greater CPU performance[1], 50% improved memory transfer rate[2], 2X CPU core count[3] and improved I/O connectivity for 24x7 storage and networking workloads

SANTA CLARA, Calif., Sept. 27, 2022 (GLOBE NEWSWIRE) -- AMD (NASDAQ: AMD) today introduced the Ryzen™ Embedded V3000 Series processors, adding the high-performance “Zen 3” core to the V-Series portfolio to deliver reliable, scalable processing performance for a wide range of storage and networking system applications. With greater CPU performance[1], DRAM memory transfer rate[2], CPU core count[3] and I/O connectivity when compared to the AMD Ryzen Embedded V1000 series, the new AMD Ryzen Embedded V3000 Series processors deliver the performance and low-power options required for some of the most demanding 24x7 operating environments and workloads.

Now shipping to leading embedded ODMs and OEMs, AMD Ryzen Embedded V3000 processors address the growing demands of enterprise and cloud storage, as well as data center network routing, switching and firewall security features. AMD Ryzen Embedded V3000 processors can power a variety of diverse use-cases ranging from virtual hyper-converged infrastructure to advanced systems at the edge.

“We designed AMD Ryzen Embedded V3000 processors for customers seeking a balance of high-performance and power-efficiency for a wide range of applications in a compact BGA package,” said Rajneesh Gaur, corporate vice president and general manager, Embedded Solutions Group, AMD. “AMD Ryzen Embedded V3000 processors deliver a robust suite of features with advanced benefits required for superior workload performance in enterprise and cloud storage and networking products.”

AMD Ryzen Embedded V3000 processors are available in four-, six- and eight-core configurations with low thermal design power (TDP) profiles spanning from 10W to 54W for storage and networking systems to enable an exacting balance of performance and power efficiency in a compact design. The new AMD Ryzen Embedded V3000 processor family enables system designers to leverage a single board design for a wide range of system configurations, with ball grid array (BGA) packaging and low thermal dissipation for the creation of more versatile, flexible designs that ease system integration.

“Storage and networking require a different balance of data processing performance, data movement, power management and thermal management than traditional compute. Processors for storage and networking require compute, memory and I/O capabilities balanced for rack space utilization, power efficiency and low heat dissipation in space-

constrained environments," said Shane Rau, research vice president, Computing Semiconductors, IDC. "The market for storage and networking will demand x86-compatible processors optimized for core data center and edge infrastructure systems and processor vendors offering them will help their OEM customers significantly expand their system TAM while leveraging their existing investments in the x86 ecosystem."

AMD Ryzen Embedded V3000 Series Processor Overview

Model	TDP Range	CPU Core / Thread Count	CPU Base Freq. GHz	CPU Boost Freq. GHz (Up to)	L2 CPU Cache	L3 CPU Cache	Max DDR5 throughput (MT/s) (Up to)	PCIe Gen4 Lanes	Ethernet Ports	Junction Temp.
V3C48	35-54W	8 / 16	3.3 GHz	3.8 GHz	4 MB	16 MB	4,800	20L	2x10 Gb	0-105C
V3C44	35-54W	4 / 8	3.5 GHz	3.8 GHz	2 MB	8 MB	4,800	20L	2x10 Gb	0-105C
V3C18I	10-25W	8 / 16	1.9 GHz	3.8 GHz	4 MB	16 MB	4,800	20L	2x10 Gb	-40-105C
V3C16	10-25W	6 / 12	2.0 GHz	3.8 GHz	3 MB	16 MB	4,800	20L	2x10 Gb	0-105C
V3C14	10-25W	4 / 8	2.3 GHz	3.8 GHz	2 MB	8 MB	4,800	20L	2x10 Gb	0-105C

Additional Key Benefits

- Linux OS support with upstreamed Ubuntu and Yocto drivers
- Planned product availability up to 10 years, providing customers with a long-lifecycle support roadmap
- Available security capabilities include AMD Memory Guard[4] for defending against unauthorized memory access, and AMD Platform Secure Boot[5] to mitigate for firmware advanced persistent threats (APTs)

Supporting Resources

- Learn more about the AMD Ryzen Embedded V3000 Series
- AMD Ryzen™ Embedded V3000 processors Product Brief

About AMD

For more than 50 years AMD has driven innovation in high-performance computing, graphics and visualization technologies. Billions of people, leading Fortune 500 businesses and cutting-edge scientific research institutions around the world rely on AMD technology daily to improve how they live, work and play. AMD employees are focused on building leadership high-performance and adaptive products that push the boundaries of what is possible. For more information about how AMD is enabling today and inspiring tomorrow, visit the AMD (NASDAQ: AMD) website, blog, LinkedIn and Twitter pages.

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[1] EMB-191: Testing conducted by AMD Performance Labs as of July 2022 on the Ryzen™ Embedded V3C18I and January 2022 on the Ryzen Embedded V1500 processor at 15 Watts and 16W TDP respectively (STAPM mode disabled) using CoreMark (compiler option: v1.0 binaries gcc610_O3_1T preset), on a test system comprising: Ryzen™ Embedded V3C18I processor: AMD Reference FOX Motherboard, 2x16GB DDR5-4800 Micron RAM, Samsung PM9A1 M.2 NVMe PCIe Gen4 512GB storage, Linux Ubuntu 22.04.3 with Kernel

5.18, Insyde BIOS RFX1001A, AMD package drivers 2022.20 Ryzen™ Embedded V1500 processor: AMD Reference BILBY Motherboard, 2x8GB DDR4-3200 Micron RAM, Samsung SSD EVO M.2 M.2 256GB storage, Linux Ubuntu 20.04.2 with Kernel 5.15, Insyde BIOS RBB1208A, AMD package driver 2021.40. PC manufacturers may vary configurations, yielding different results. The Ryzen Embedded V3C18I scored 34,906 iterations / second and V1500 15,526 iterations / second using CoreMark (compiler option: v1.0 binaries gcc610_O3_1T preset). (34,906/15,525= 224% the performance or 1.24x (124%) better.

[2] EMB-190: Ryzen™ Embedded V3C48 processor family offers dual-channel 64-bit DDR5 up to 4800 MT/s. Ryzen™ Embedded V1780 processor family offers dual-channel 64-bit DDR4 up to 3200 MT/s. 50% = (4800 – 3200) / 3200

[3] EMB-189: Ryzen™ Embedded V3000 processor family offers up to 8 “Zen 3” x86 CPU cores. Ryzen™ Embedded V1000 processor family offers up to 4 “Zen” x86 CPU cores.

[4] Full system memory encryption with AMD Memory Guard is included in AMD Ryzen PRO, AMD Ryzen Threadripper PRO, and AMD Athlon PRO processors. Requires OEM enablement. Check with the system manufacturer prior to purchase. GD-206.

[5] An OEM who has enabled the AMD Platform Secure Boot feature grants permission for their cryptographically signed BIOS code to run only on their platforms using an AMD Platform Secure Boot enabled motherboard. One-time-programmable fuses in the processor bind the processor to the OEM’s firmware code signing key. From that point on, that processor can only be used with motherboards that use the same code signing key. GD-192.

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