June 4, 2014

AMD Expands Award-Winning Embedded G-Series Family With New Pin-Compatible SoC and CPU Solutions

New AMD Embedded G-Series Processors Selected by HP and Advantech for Thin Client and Industrial Solutions

TAIPEI, TAIWAN -- (Marketwired) -- 06/04/14 -- ***Computex -*** AMD (NYSE: AMD) today announced new x86 AMD Embedded G-Series system-on-chip (SoC) and central processing unit (CPU) solutions for embedded applications, including early adoption by HP for thin client deployment in healthcare, finance, education and retail, as well as Advantech for industrial applications in rugged environments.

The new product families expand upon the high-performance, low-power capabilities of the award-winning AMD Embedded G-Series platform, bringing high performance and integrated security with enterprise-class error-correction code (ECC) memory support, dual- and quad-core variants, and a discrete-class GPU and I/O controller on the same die. The new G-Series processors are pin-compatible across the AMD G-Series SoC and CPU family for ease of scalability among embedded applications, including communications and networking infrastructure, industrial control and automation (IC&A), thin clients, gaming machines, and digital signage.

"The AMD Embedded G-Series SoC family is one of the most widely adopted platforms in the history of AMD Embedded Solutions, and AMD brings even more capabilities, experiences and ecosystem support with these new offerings," said Scott Aylor, corporate vice president and general manager, AMD Embedded Solutions. "The new SoC and CPU additions further our commitment to provide embedded design engineers with the highest levels of power efficient graphics and compute capabilities in the market, along with a pin-compatible and secure product portfolio to maximize their software and board-level investments."

AMD Embedded G-Series SoC Solutions (Previously Codenamed: "Steppe Eagle")
The new AMD Embedded G-Series SoC is an ideal fit for rugged and harsh environments, including IC&A applications with offerings for ultra low-power solutions down to 5 watts TDP with configurable TDP (cTDP) features, to high-performance deployments with up to 53 percent more overall performance compared to previous G-Series SoC solutions[1]. Advantech's new industrial-grade Mini-ITX motherboard AIMB-225 employs quad- and dual-core AMD Embedded G-Series SoC processors, resulting in ultra low power consumption and advanced graphics performance for rugged applications such as ATMs, kiosks, automation, medical equipment and gaming machines.

Processors in the new AMD Embedded G-Series SoC family now include enhanced security features, with the AMD platform security processor (PSP) built upon the ARM TrustZone®

architecture, and are designed to protect against malicious access to sensitive data and operations at the hardware level, making them an ideal fit for cloud-based thin client solutions.

"There is a growing need for more advanced embedded solutions in healthcare, finance, education and retail services," said Jeff Groudan, worldwide director, Thin Client product management, HP. "The AMD G-series SoC provides HP thin clients with enhanced security, value and unmatched performance."

AMD Embedded G-Series CPU Solutions (Previously Codenamed: "Crowned Eagle")
As datacenters continue to scale up to meet the demands brought by the cloud and the proliferation of devices, cost and energy efficiency aspects become ever more critical. IT organizations are looking to consolidate their processing capabilities onto a uniform architecture that delivers high performance at low costs and low power. With 64-bit processing based on dual- or quad-core x86 CPU architecture, the new AMD G-Series CPUs are ideally suited for networking and communications infrastructure applications. The new AMD G-Series CPUs deliver 1.2 - 2.0 GHz and a robust feature set, including integrated PCI-E Gen 2.0, USB3.0, SATA ports, and single-channel DDR3-1600 memory with ECC support.

An on-chip PSP offloads Internet Protocol Security (IPsec) functionality, which facilitates control and data plane functionality, resulting in cost-optimized, fan-less security appliances, storage controllers and Network Attached Storage appliances. The integration of a wide variety of peripherals, combined with the ability to deliver 34 percent more CPU-centric performance-per-dollar than competing Intel solutions[2], makes the new AMD G-Series CPU an ideal choice for control plane applications on router and switch line cards.

New Features, Benefits and Support

- Integrated security solution: By combining its breadth and decades of market experience with ARM TrustZone® architecture, AMD is creating a new generation of secure computing capabilities for digital content, data, e-commerce and trusted client-to-cloud interactions. The AMD PSP is built upon the TrustZone® architecture and designed to protect against malicious access to sensitive data and operations at the hardware level based on open standards and interoperable APIs.
- Increased performance-per-watt: The AMD Embedded G-Series SoC provides advanced power management features, including cTDP, increase the performance-per-watt efficiency of the platform 96 percent compared to the previous platform[3].
- Pin compatibility: With the introduction of the new AMD G-Series SoC and CPU solutions, AMD embedded customers can now create common boards across the entire AMD G-Series SoC family to migrate designs between solutions for hardware, software and board-level scalability by leveraging existing hardware and software investments.
- Open-source Linux development: As a gold-level member of the Yocto Project™, a Linux Foundation Collaboration Project, and as part of a recent multi-year agreement with Mentor Graphics, embedded systems developers now have access to customized embedded Linux development and commercial support on the AMD G-Series family through Mentor Embedded Linux and Sourcery™ CodeBench, as well as no-cost Mentor Embedded Linux Lite.

Supporting Resources

- Learn more about the new AMD Embedded G-Series product family
- Blog: New AMD G-Series SoCs and CPUs Arrive
- Become a fan of AMD on Facebook
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1 Overall performance was measured using a suite of industry benchmarks consisting of 3DMark06, 3DMark11, POVRay v3.7, Passmark v7, PCMark8 v2.0, and BasemarkCL 1.0. The GX-412HC's TDP is 7W and GX-210HA's TDP is 9W. The performance delta of 53% was calculated based on GX-412HC's geometric mean of 555.3 and GX-210HA's geometric mean of 363.6. The performance-per-watt delta of 96% was calculated based on GX-412HC's performance-per-watt ratio of 79.3 and GX-210HA's performance-per-watt ratio of 40.4. The AMD Steppe Eagle GX-412HC and G-S SOC GX-210HA used an AMD Larne motherboard with 4GB DDR3-1333 memory and 320GB Toshiba HDD. The system ran Windows® 7 Ultimate. EMB-104

2 Performance comparison is based on the EEMBC CoreMark v1.0 benchmark. The kit price of GX-416RA is $25 and the kit price of Celeron 1037U is $25. The performance delta of 34% was calculated based on GX-416RA's CoreMark score of 24699 and Celeron 1037U's CoreMark score of 18461. The performance-per-$ delta of 34% was calculated based on the GX-416RA's performance-per-$ ratio of 987.96 and 1037U's performance-per-$ ratio of 738.44. The AMD Steppe Eagle GX-416RA used an AMD Larne development board with 4GB DDR3-1600 memory and 80GB Hitachi HDD. The Intel Celeron 1037U used a Toshiba Satellite C55-A5220 motherboard with 8GB DDR3-1600 memory and 256GB Sandisk HDD. Both systems ran Ubuntu Linux 11.1. EMB-105

3 Overall performance was measured using a suite of industry benchmarks consisting of 3DMark06, 3DMark11, POVRay v3.7, Passmark v7, PCMark8 v2.0, and BasemarkCL 1.0. The GX-412HC's TDP is 7W and GX-210HA's TDP is 9W. The performance delta of 53% was calculated based on GX-412HC's geometric mean of 555.3 and GX-210HA's geometric mean of 363.6. The performance-per-watt delta of 96% was calculated based on GX-412HC's performance-per-watt ratio of 79.3 and GX-210HA's performance-per-watt ratio of 40.4. The AMD Steppe Eagle GX-412HC and G-S SOC GX-210HA used an AMD Larne motherboard with 4GB DDR3-1333 memory and 320GB Toshiba HDD. The system ran Windows® 7 Ultimate. EMB-104

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Source: Advanced Micro Devices