August 29, 2022

AMD Launches Ryzen 7000 Series Desktop Processors with “Zen 4” Architecture: the Fastest Core in Gaming[1]

New AMD Socket AM5 platform combines with world’s first 5nm desktop PC processors to deliver powerhouse performance for gamers and content creators

AUSTIN, Texas, Aug. 29, 2022 (GLOBE NEWSWIRE) -- Today, AMD (NASDAQ: AMD) revealed the Ryzen™ 7000 Series Desktop processor lineup powered by the new “Zen 4” architecture, ushering in the next era of high performance for gamers, enthusiasts, and content creators. Featuring up to 16 cores, 32 threads and built on an optimized, high-performance, TSMC 5nm process node, the Ryzen 7000 Series processors deliver dominant performance and leadership energy efficiency. Compared to the previous generation, AMD Ryzen 7950X processor enables single-core performance improvement of up to +29%[2], up to 45% more compute for content creators in POV Ray[3], up to 15% faster gaming performance in select titles[4], and up to 27% better performance-per-watt[5]. AMD’s most expansive desktop platform to date, the new Socket AM5 platform is designed for longevity with support through 2025.

“The AMD Ryzen 7000 Series brings leadership gaming performance, extraordinary power for content creation, and advanced scalability with the new AMD Socket AM5,” Saeid Moshkelani, senior vice president and general manager, Client business unit, AMD. “With the next generation Ryzen 7000 Series Desktop processors, we are proud to uphold our promise of leadership and continuous innovation, delivering the ultimate PC experience for gamers and creators alike.”

AMD Ryzen 7000 Series Desktop Processors

The AMD Ryzen 7000 Series once again delivers a double-digit IPC uplift over “Zen 3”[6], further solidifying a track record of innovation, execution, and delivery of the award-winning “Zen” architecture. The world’s first high-performance x86 5nm CPU, the Ryzen 7000 Series ushers in the remarkable speed of “Zen 4” architecture, advancing gaming and content creation performance leadership to new levels.

At the top of the stack, the 16-core AMD Ryzen 9 7950X processor offers up to 57% better content creation performance in V-Ray Render compared to the competition[7]. Meanwhile, even the 6-core AMD Ryzen 5 7600X processor offers an average of 5% faster gaming performance across select titles than the competitor’s flagship gaming processor[4].

The incredible performance improvements also come with stunning advances in energy efficiency; AMD Ryzen 7950X processor is up to 47% more energy efficient than the

competition[8]. Beyond the core, the Ryzen 7000 Series Processors feature an all-new 6nm I/O die, which enables hardware-accelerated video encode/decode[9], light-duty graphics work and multi-display support. Across the CPU, a host of new power management technologies leveraged from AMD's ultra-efficient mobile processors allow Ryzen 7000 Series Desktop processors to run more efficiently than ever before.

Ryzen 7000 Series Desktop processors are expected to be available globally from leading etailers and retailers beginning September 27, starting at an SEP of $299 USD.

Model	Cores/Threads	Boost[10]/ Base Frequency	Total Cache	PCIe®	TDP	SEP (USD)
AMD Ryzen 9 7950X	16C/32T	Up to 5.7 / 4.5 GHZ	80MB	Gen 5	170W	$699
AMD Ryzen 9 7900X	12C/24T	Up to 5.6 / 4.7 GHZ	76MB	Gen 5	170W	$549
AMD Ryzen 7 7700X	8C/16T	Up to 5.4 / 4.5 GHZ	40MB	Gen 5	105W	$399
AMD Ryzen 5 7600X	6C/12T	Up to 5.3 / 4.7 GHZ	38MB	Gen 5	105W	$299

New AMD Socket AM5 Updates

With the introduction of the Ryzen 7000 Series Desktop processors, AMD also unveiled the new Socket AM5 platform, offering cutting-edge connectivity features like dual-channel DDR5 memory. The AM5 platform also includes up to 24 PCIe® 5.0 lanes, making it AMD's most expansive desktop platform to date. Support for new and evolving technologies like PCIe® Gen 5 and DDR5 memory empowers users to grow with their Socket AM5 solution, which AMD will support with platform longevity through 2025 and beyond.

The new Socket AM5 motherboard family features four new chipsets, giving users the power and flexibility to choose the exact features they want. The four chipsets feature:

- AMD X670 Extreme: Bringing the most connectivity and extreme overclocking capabilities[11] with PCIe 5.0 support for graphics and storage
- AMD X670: Supporting enthusiast overclocking with PCIe® 5.0 support for storage and optional graphics support
- AMD B650E: Designed for performance users with PCIe® 5.0 storage support and optional graphics support
- AMD B650: Designed for mainstream users with support for DDR5 memory and optional PCIe® 5.0 support

New motherboards will be available starting at an SEP of $125 USD, with the AMD X670 and X670E chipsets arriving in September, and AMD B650E and B650 chipsets in October.

AMD EXPO™ Technology

New for the Ryzen 7000 Series Desktop processors and optimized for AMD Socket AM5 motherboards, AMD EXPO™ technology provides users with advanced profile settings for DDR5 memory overclocking[11]. When optimized for high-performance gaming, consumers can expect to see up to 11% faster gaming performance with AMD EXPO technology in F1® 2022[12].

AMD EXPO technology was designed to achieve higher gaming performance from pre-configured overclocking profiles[11] and is easy to implement. PC enthusiasts who want to understand the finer details of an AMD EXPO technology-enabled module can find public

self-certification reports, which clearly lay out the module's full timing table, components, and the system configuration used to finalize the memory's specifications. AMD is offering EXPO technology to its industry memory partners without royalties or licensing fees.

AMD EXPO technology arrives to market alongside the AMD Ryzen 7000 Series processors, with offerings from ADATA, Corsair, GeIL, G.SKILL, and Kingston. Over 15 AMD EXPO technology-enabled memory kits will be initially available, with memory speeds up to DDR5-6400.

Supporting Resources

- Learn more about AMD Ryzen 7000 Series Desktop processors here
- Learn more about AMD EXPO here
- Become a fan of AMD on Facebook
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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.

Cautionary Statement
This press release contains forward-looking statements concerning Advanced Micro Devices, Inc. (AMD) such the features, functionality, performance, availability, timing and expected benefits of AMD products including the AMD Ryzen™ 7000 desktop processors, the AMD Socket AM5 platform and AMD EXPO™ technology, which are made pursuant to the Safe Harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are commonly identified by words such as "would," "may," "expects," "believes," "plans," "intends," "projects" and other terms with similar meaning. Investors are cautioned that the forward-looking statements in this press release are based on current beliefs, assumptions and expectations, speak only as of the date of this press release and involve risks and uncertainties that could cause actual results to differ materially from current expectations. Such statements are subject to certain known and unknown risks and uncertainties, many of which are difficult to predict and generally beyond AMD's control, that could cause actual results and other future events to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. Material factors that could cause actual results to differ materially from current expectations include, without limitation, the following: Intel Corporation's dominance of the microprocessor market and its aggressive business practices; global economic uncertainty; loss of a significant customer; impact of the COVID-19 pandemic on AMD's business, financial condition and results of operations; competitive markets in which AMD's products are sold; market conditions of the industries in which AMD products are sold; cyclical nature of the semiconductor industry; quarterly and seasonal sales patterns; AMD's ability to adequately protect its technology or other intellectual property; unfavorable currency exchange rate fluctuations; ability of third party manufacturers to manufacture AMD's products on a timely basis in sufficient quantities and using competitive technologies; availability of essential equipment, materials, substrates or manufacturing processes; ability to achieve expected manufacturing yields for AMD's products; AMD's ability to introduce products on a timely

basis with expected features and performance levels; AMD's ability to generate revenue from its semi-custom SoC products; potential security vulnerabilities; potential security incidents including IT outages, data loss, data breaches and cyber-attacks; potential difficulties in upgrading and operating AMD's new enterprise resource planning system; uncertainties involving the ordering and shipment of AMD's products; AMD's reliance on third-party intellectual property to design and introduce new products in a timely manner; AMD's reliance on third-party companies for design, manufacture and supply of motherboards, software and other computer platform components; AMD's reliance on Microsoft and other software vendors' support to design and develop software to run on AMD's products; AMD's reliance on third-party distributors and add-in-board partners; impact of modification or interruption of AMD's internal business processes and information systems; compatibility of AMD's products with some or all industry-standard software and hardware; costs related to defective products; efficiency of AMD's supply chain; AMD's ability to rely on third party supply-chain logistics functions; AMD's ability to effectively control sales of its products on the gray market; impact of government actions and regulations such as export administration regulations, tariffs and trade protection measures; AMD's ability to realize its deferred tax assets; potential tax liabilities; current and future claims and litigation; impact of environmental laws, conflict minerals-related provisions and other laws or regulations; impact of acquisitions, joint ventures and/or investments, including acquisitions of Xilinx and Pensando, on AMD's business and AMD's ability to integrate acquired businesses; impact of any impairment of the combined company's assets on the combined company's financial position and results of operation; restrictions imposed by agreements governing AMD's notes, the guarantees of Xilinx's notes and the revolving credit facility; AMD's indebtedness; AMD's ability to generate sufficient cash to meet its working capital requirements or generate sufficient revenue and operating cash flow to make all of its planned R&D or strategic investments; political, legal, economic risks and natural disasters; future impairments of goodwill and technology license purchases; AMD's ability to attract and retain qualified personnel; AMD's stock price volatility; and worldwide political conditions. Investors are urged to review in detail the risks and uncertainties in AMD's Securities and Exchange Commission filings, including but not limited to AMD's most recent reports on Forms 10-K and 10-Q.

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1. RPL-010: Testing as of 15 August, 2022, by AMD Performance Labs using the following hardware: AMD AM5 Reference Motherboard with AMD Ryzen™ 7950X/7900X/7700X/7600X and G.Skill DDR5-6000C30, versus AMD AM4 Reference Motherboard with Ryzen™ 9 5950X and DDR4-3600C16, versus ROG Maximus Z690 Hero motherboard with Core i9-12900KS and DDR5-6000C30. ALL SYSTEMS configured with NXZT Kraken X63, open air test bench, Radeon™ RX 6950XT (driver 22.7.1 Optional), Windows® 11 22000.856, AMD Smart Access Memory/PCIe® Resizable Base Address Register ("ReBAR") ON, Virtualization-Based Security (VBS) OFF.

2. RPL-006: Testing with Geekbench 5.4.x as of 15 August, 2022, by AMD Performance Labs using the following hardware: AMD AM5 Reference Motherboard with AMD Ryzen™ 9 7950X and G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™, versus AMD AM4 Reference Motherboard with Ryzen™ 9 5950X and DDR4-3600C16. ALL SYSTEMS configured with NXZT Kraken X63, open air test bench, Radeon™ RX 6950XT (driver 22.7.1 Optional), Windows® 11 22000.856, AMD Smart Access Memory/PCIe®

Resizable Base Address Register (“ReBAR”) ON, Virtualization-Based Security (VBS) OFF. Results may vary.
3. RPL-008: Testing as of 15 August, 2022, by AMD Performance Labs using the following hardware: AMD AM5 Reference Motherboard with AMD Ryzen™ 9 7950X with G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded, AMD AM4 Reference Motherboard with AMD Ryzen™ 9 5950X and DDR4-3600C16, and ROG Maximus Z690 Hero with Core i9-12900K and G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded. ALL SYSTEMS configured with NXZT Kraken X63, open air test bench, Radeon™ RX 6950XT (driver 22.7.1 Optional), Windows® 11 22000.856, AMD Smart Access Memory/PCIe® Resizable Base Address Register (“ReBAR”) ON, Virtualization-Based Security (VBS) OFF. Results may vary.
4. RPL-007: Testing as of 15 August, 2022, by AMD Performance Labs using the following hardware: AMD Socket AM5 Reference Motherboard with AMD Ryzen™ 9 7950X, Ryzen™ 9 7900X, Ryzen™ 5 7600X and G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™; versus AMD Socket AM4 Reference Motherboard with Ryzen™ 9 5950X, Ryzen™ 9 5900X, Ryzen™ 5 5600X; versus ROG Maximus Z690 Hero with Core i9-12900K and G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded. ALL SYSTEMS configured with NXZT Kraken X63, open air test bench, Radeon™ RX 6950XT (driver 22.7.1 Optional), Windows® 11 22000.856, AMD Smart Access Memory/PCIe® Resizable Base Address Register (“ReBAR”) ON, Virtualization-Based Security (VBS) OFF. All games tested at 1920x1080 with HIGH in-game preset and the chronologically newest graphics industry API available within the game’s rendering engine (e.g. Vulkan® over OpenGL™, DirectX® 12 over DirectX® 11). Results may vary.
5. RPL-014: Testing as of 15 August, 2022, by AMD Performance Labs using the following hardware: AMD AM5 Reference Motherboard with AMD Ryzen™ 9 7950X with G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded, AMD AM4 Reference Motherboard with AMD Ryzen™ 9 5950X and DDR4-3600C16. ALL SYSTEMS configured with NXZT Kraken X63, open air test bench, Radeon™ RX 6950XT (driver 22.7.1 Optional), Windows® 11 22000.856, AMD Smart Access Memory/PCIe® Resizable Base Address Register (“ReBAR”) ON, Virtualization-Based Security (VBS) OFF. Processor power measured at the package, performance measured in Cinebench R23 nT score. Results may vary.
6. RPL-005: Testing as of 15 August, 2022, by AMD Performance Labs using the following hardware: AMD AM5 Reference Motherboard with AMD Ryzen™ 7 7700X with G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded, AMD AM4 Reference Motherboard with AMD Ryzen™ 7 5800X and DDR4-3600C16. Processors fixed to 4GHz frequency with 8C16 enabled and evaluated with 22 different workloads. ALL SYSTEMS configured with NXZT Kraken X63, open air test bench, Radeon™ RX 6950XT (driver 22.7.1 Optional), Windows® 11 22000.856, AMD Smart Access Memory/PCIe® Resizable Base Address Register (“ReBAR”) ON, Virtualization-Based Security (VBS) OFF. Results may vary.
7. RPL-008: Testing as of 15 August, 2022, by AMD Performance Labs using the following hardware: AMD AM5 Reference Motherboard with AMD Ryzen™ 9 7950X with G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded, AMD AM4 Reference Motherboard with AMD Ryzen™ 9 5950X and DDR4-3600C16, and ROG Maximus Z690 Hero with Core i9-12900K and G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded. ALL SYSTEMS configured with NXZT Kraken X63, open air test bench, Radeon™ RX 6950XT (driver 22.7.1 Optional), Windows® 11 22000.856, AMD Smart Access Memory/PCIe® Resizable Base Address Register (“ReBAR”) ON, Virtualization-Based Security (VBS) OFF. Results may vary.

8. RPL-009: Testing as of 15 August, 2022, by AMD Performance Labs using the following hardware: AMD AM5 Reference Motherboard with AMD Ryzen™ 9 7950X with G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded, versus ROG Maximus Z690 Hero with Core i9-12900K and G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded. ALL SYSTEMS configured with NXZT Kraken X63, open air test bench, Gigabyte RTX 3090 Gaming OC (driver 516.40), Windows® 11 22000.856, AMD Smart Access Memory/PCIe® Resizable Base Address Register ("ReBAR") ON, Virtualization-Based Security (VBS) OFF. Power measured at the wall in Joules of energy consumed for the full workload. Raytraced rendering performance evaluated with Chaos V-Ray Benchmark. Results may vary.
9. Video codec acceleration (including at least the HEVC (H.265), H.264, VP9, and AV1 codecs) is subject to and not operable without inclusion/installation of compatible media players. GD-176.
10. Max boost for AMD Ryzen processors is the maximum frequency achievable by a single core on the processor running a bursty single-threaded workload. Max boost will vary based on several factors, including, but not limited to: thermal paste; system cooling; motherboard design and BIOS; the latest AMD chipset driver; and the latest OS updates. GD-150.
11. GD-26: AMD's product warranty does not cover damages caused by overclocking, even when overclocking is enabled via AMD hardware and/or software.
12. RPL-011: Testing as of 15 August, 2022, by AMD Performance Labs using the following hardware: AMD Socket AM5 Reference Motherboard with Ryzen™ 5 7600X and G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ versus ROG Maximus Z690 Hero with Core i9-12900K and G.Skill DDR5-6000C30 (F5-6000J3038F16GX2-TZ5N) with AMD EXPO™ loaded. ALL SYSTEMS configured with NXZT Kraken X63, open air test bench, Radeon™ RX 6950XT (driver 22.7.1 Optional), Windows® 11 22000.856, AMD Smart Access Memory/PCIe® Resizable Base Address Register ("ReBAR") ON, Virtualization-Based Security (VBS) OFF. F1 2022 tested at 1920x1080 with HIGH in-game preset and the chronologically newest graphics industry API available within the game's rendering engine (e.g. Vulkan® over OpenGL™, DirectX® 12 over DirectX® 11). Results may vary.

Contact:
Stacy MacDiarmid
AMD Communications
+1 512-658-2265
Stacy.MacDiarmid@amd.com

Suresh Bhaskaran
AMD Investor Relations
+1 408-749-2845
Suresh.Bhaskaran@amd.com

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