July 7, 2019

# AMD Unleashes Ultimate PC Gaming Platform with Worldwide Availability of AMD Radeon™ RX 5700 Series Graphics Cards and AMD Ryzen™ 3000 Series Desktop Processors

*– Introducing world's first PCIe® 4.0 ready desktop CPUs and GPUs, designed to push the limits of gamers, enthusiasts, and content creators –*

SANTA CLARA, Calif., July 07, 2019 (GLOBE NEWSWIRE) -- Today, AMD (NASDAQ: AMD) announced the global availability of its new leadership PC gaming platform based on AMD Radeon™ RX 5700 series graphics cards and 3rd Gen AMD Ryzen™ Desktop Processors, as well as AMD Ryzen™ 3000 Series Processors with Radeon™ Graphics (APUs). Together, these offerings take gaming performance, immersive experiences, and visual fidelity to new heights.

AMD Radeon RX 5700 series graphics cards redefine what is possible in 1440p gaming. Built on the ground-breaking all-new AMD RDNA gaming architecture and 7nm process technology, the new graphics cards deliver superior visual fidelity, lightning-fast performance and advanced features to power the latest AAA and eSports titles. Starting today, AMD Radeon RX 5700 XT and RX 5700 graphics cards are available on AMD.com and from leading etailers and retailers for $399 and $349 USD SEP[1], respectively, and the 50th Anniversary Edition Radeon RX 5700 XT graphics card is available while supplies last for $449 USD SEP[1] from AMD.com and JD.com.

With up to 12 cores and 24 threads now available, 3rd Gen AMD Ryzen Desktop Processors are another powerful demonstration of the technology leadership of AMD, delivering the first high-performance 7nm processors in consumer desktop PCs. Building on the legacy of high-performance "Zen" architectures, the "Zen 2" microarchitecture incorporates enhancements that deliver a significant IPC uplift of an estimated 15 percent generationally[2] for faster gaming and content creation. Beginning today, 3rd Gen Ryzen Desktop Processors, including the new Ryzen 3000 Series Processors with Radeon Graphics, are available globally at leading etailers and retailers starting at just $99 USD SEP[1].

"We are proud to deliver our newest AMD Radeon graphics cards and AMD Ryzen processor products to create the ultimate PC gaming platform with leadership performance at every price point," said Dr. Lisa Su, President and CEO, AMD. "AMD is committed to driving innovation and competition across the computing and graphics markets to give PC enthusiasts, gamers and creators incredible experiences and unmatched value."

## AMD Radeon RX 5700 Series Graphics Cards: Amazing Value and Performance for 1440p Gaming

AMD Radeon RX 5700 Series graphics cards harness the RDNA gaming architecture, which was built from the ground up for superior performance, scalability and power efficiency, and designed to power the future of PC, console, mobile and cloud-based gaming. The new RDNA architecture supports high-speed GDDR6 memory, provides PCIe 4.0 support, and provides up to 1.25X higher performance-per-clock[3] and up to 1.5X higher performance-per-watt over AMD's previous Graphic Core Next (GCN) architecture[4], enabling hyper-realistic, ultra-responsive and high-framerate gaming experiences.

The newest Radeon graphics cards offer powerful new features to elevate 1440p gaming, including:

- **Radeon Image Sharpening (RIS) –** Brings crispness and clarity to in-game visuals that have been softened by other post-process effects in DirectX® 9, 12, and Vulkan® titles. When paired with Radeon GPU upscaling, RIS enables sharp visuals and fluid frame rates on very high-resolution displays.
- **FidelityFX –** Offers an open-source toolkit for game developers with high-quality post-process effects to help make games look beautiful while offering an optimal balance of visual fidelity and performance. Available on GPUOpen, FidelityFX features Contrast-Adaptive Sharpening (CAS), which draws out detail in low-contrast areas while minimizing artifacts caused by typical image sharpening routines.
- **Radeon™ Anti-Lag –** Optimized for eSports, improves competitiveness by decreasing input-to-display response times by up to 31 percent[5].

| Model | Compute Units | Stream Processors | TFLOPS | GDDR6 (GB) | Base Clock (MHz) | Game Clock[6] (MHz) | Boost Clock (MHz) | SEP[1] (USD) |
|---|---|---|---|---|---|---|---|---|
| 50th Anniversary Edition Radeon™ RX 5700 XT | 40 | 2,560 | Up to 10.14 | 8 | 1,680 | 1,830 | Up to 1,980 | $449 |
| Radeon™ RX 5700 XT | 40 | 2,560 | Up to 9.75 | 8 | 1,605 | 1,755 | Up to 1,905 | $399 |
| Radeon™ RX 5700 | 36 | 2,304 | Up to 7.95 | 8 | 1,465 | 1,625 | Up to 1,725 | $349 |

## 3rd Gen AMD Ryzen Desktop Processors: Unparalleled Platform and Leadership Performance

Built on power-efficient 7nm-based processors, the new 3rd Gen Ryzen Desktop Processors enable ultimate performance, power efficiency, and core counts across single-thread and multi-thread workloads, offering:

- **Elite gaming performance –** With higher clock speeds, more performance per clock[2], and larger L3 cache than the previous generation, plus new synergies with the Windows® 10 May 2019 Update, 3rd Gen Ryzen Desktop Processors enable more powerful and smoother gaming experiences across 1080p and 1440p resolutions[7,8].
- **Winning content creation performance –** For content creators, 3rd Gen Ryzen Desktop Processors enable a commanding performance advantage[9] over the competition in rendering, encoding, color grading, and more.
- **Cooler and quieter PC experience –** 3rd Gen Ryzen Desktop Processors offer supreme performance with highly energy efficient operation, enabling up to 58% better performance-per-watt on Ryzen 9 Processors and up to 30% better performance-per-watt on Ryzen 7 Processors -- all while running in a highly efficient, low-power envelope -- than the competition[10,11].

- **Overclocking made simple**[12] **–** Like all AMD Ryzen Processors, 3rd Gen Ryzen Desktop Processors are fully multiplier and voltage unlocked. New Precision Boost Overdrive[13] with Automatic Overclocking can deliver even higher performance on 3000 Series Ryzen 5, 7, and 9 processors by communicating with the user's motherboard and increasing the maximum clock frequency by up to 200MHz at the touch of a button. A new and improved AMD Ryzen™ Master Software utility is also available, including a redesigned user interface and many new features, offering users an easy way to squeeze every drop of performance from their AMD Ryzen Desktop Processor.

Additionally, with the release of the 3rd Gen Ryzen Desktop Processors, AMD designed and unveiled the new X570 chipset for AMD Socket AM4, enabling the world's first platform with PCIe® 4.0 support for consumers. Unique support for PCIe® 4.0 paves the way for new classes of high-performance graphics cards, networking devices, NVMe drives, and more. With over 100 AM4 motherboards currently in market, our partners are expected to introduce an additional 50+ models with the new AMD X570 chipset to complete the widest selection of launch motherboards in AMD history.

Together, the 3rd Gen Ryzen Desktop Processor family with a X570 motherboard enable more high-speed ports and lanes than any other mainstream socket – a truly enthusiast-worthy solution.

| 3rd Gen Ryzen Desktop Processors | Cores/ Threads | TDP[14] (Watts) | Boost/Base Freq. (GHz) | L2 + L3 Cache (MB) | PCIe® 4.0 Lanes (processor + AMD X570) | SEP[1] (USD) |
|---|---|---|---|---|---|---|
| Ryzen™ 9 3950X | 16/32 | 105 | 4.7/3.5 | 72 | 44 (36 useable) | Available September 2019 |
| Ryzen™ 9 3900X | 12/24 | 105 | 4.6/3.8 | 70 | 44 (36 useable) | $499 |
| Ryzen™ 7 3800X | 8/16 | 105 | 4.5/3.9 | 36 | 44 (36 useable) | $399 |
| Ryzen™ 7 3700X | 8/16 | 65 | 4.4/3.6 | 36 | 44 (36 useable) | $329 |
| Ryzen™ 5 3600X | 6/12 | 95 | 4.4/3.8 | 35 | 44 (36 useable) | $249 |
| Ryzen™ 5 3600 | 6/12 | 65 | 4.2/3.6 | 35 | 44 (36 useable) | $199 |

**AMD Ryzen 3000 Series Processors with Radeon Graphics**

AMD also announced availability of the Ryzen 3000 Series Desktop Processors with Radeon Graphics, armed with higher CPU and graphics clock speeds than its prior generation of processors, plus new driver features like Radeon Anti-Lag. Offering best-in-class graphics performance[15]; smooth framerates for 1080p gamers[16]; 4K HDR streaming capabilities; and Radeon™ FreeSync support[17], the latest generation of AMD Ryzen Processors with Graphics are ideal for affordable gaming rigs, SFF PCs, HTPCs, and other unique builds.

| Ryzen 3000 Series Processors with Radeon Graphics | Cores / Threads | TDP (Watts) | Boost/Base Freq. (GHz) | Graphics (Graphics Clock) | L2 + L3 Cache (MB) | SEP[1] (USD) |
|---|---|---|---|---|---|---|
| Ryzen™ 5 3400G | 4/8 | 65 | 4.2/3.7 | Radeon™ RX Vega 11 (1400 MHz) | 6 | $149 |
| Ryzen™ 3 3200G | 4/4 | 65 | 4.0/3.6 | Radeon™ Vega 8 (1250 MHz) | 6 | $99 |

**Play Gears 5 and 100+ Other PC Games with Xbox Game Pass**[18]

AMD is also offering the Xbox Game Pass for PC, providing complimentary, three-month access to Xbox Game Pass for PC with the purchase of AMD Radeon RX 5700 Series

graphics cards, AMD Ryzen 3000 Series processors, and other select AMD products from participating retailers. Learn more here.

**Supporting Resources**

- Learn more about the new AMD Radeon™ RX 5700 Series graphics cards
- Learn more about the new 3rd Gen AMD Ryzen™ Desktop Processors and Ryzen™ 3000 series processors with Radeon™ Graphics
- Become a fan of AMD on Facebook
- Follow AMD on Twitter

**Cautionary Statement**

This press release contains forward-looking statements concerning Advanced Micro Devices, Inc. (AMD) including, but not limited to, the features, functionality, performance, availability, timing, pricing, expectations and expected benefits of AMD Radeon™ RX 5700 Series Graphics Cards and AMD Ryzen™ 3000 Series Desktop Processors, 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," "intends," "believes," "expects," "may," "will," "should," "seeks," "plans," "pro forma," "estimates," "anticipates," or the negative of these words and phrases, other variations of these words and phrases or comparable terminology. Investors are cautioned that the forward-looking statements in this document are based on current beliefs, assumptions and expectations, speak only as of the date of this document 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 may limit AMD's ability to compete effectively; AMD has a wafer supply agreement with GLOBALFOUNDRIES Inc. (GF) with obligations to purchase all of its microprocessor and APU product requirements, and a certain portion of its GPU product requirements, manufactured at process nodes larger than 7 nanometer from GF with limited exceptions. If GF is not able to satisfy AMD's manufacturing requirements, AMD's business could be adversely impacted; AMD relies on third parties to manufacture its products, and if they are unable to do so on a timely basis in sufficient quantities and using competitive technologies, AMD's business could be materially adversely affected; failure to achieve expected manufacturing yields for AMD's products could negatively impact its financial results; the success of AMD's business is dependent upon its ability to introduce products on a timely basis with features and performance levels that provide value to its customers while supporting and coinciding with significant industry transitions; if AMD cannot generate sufficient revenue and operating cash flow or obtain external financing, it may face a cash shortfall and be unable to make all of its planned investments in research and development or other strategic investments; the loss of a significant customer may have a material adverse effect on AMD; AMD's receipt of revenue from its semi-custom SoC products is dependent upon its technology being designed into third-party products and the success of those products; global economic and market uncertainty may adversely impact AMD's business and operating results; AMD's products may be subject to security vulnerabilities that could have a material adverse effect on AMD; IT outages, data loss, data breaches and cyber-attacks could compromise AMD's intellectual property or other sensitive information, be costly to remediate and cause significant damage to its business, reputation and

operations; AMD's operating results are subject to quarterly and seasonal sales patterns; AMD may not be able to generate sufficient cash to service its debt obligations or meet its working capital requirements; AMD has a large amount of indebtedness which could adversely affect its financial position and prevent it from implementing its strategy or fulfilling its contractual obligations; the agreements governing AMD's notes and the Secured Revolving Line of Credit impose restrictions on AMD that may adversely affect AMD's ability to operate its business; the markets in which AMD's products are sold are highly competitive; AMD's worldwide operations are subject to political, legal and economic risks and natural disasters, which could have a material adverse effect on it; the conversion of the 2.125% Convertible Senior Notes due 2026 may dilute the ownership interest of AMD's existing stockholders, or may otherwise depress the price of its common stock; uncertainties involving the ordering and shipment of AMD's products could materially adversely affect it; the demand for AMD's products depends in part on the market conditions in the industries into which they are sold. Fluctuations in demand for AMD's products or a market decline in any of these industries could have a material adverse effect on its results of operations; AMD's ability to design and introduce new products in a timely manner is dependent upon third-party intellectual property; AMD depends on third-party companies for the design, manufacture and supply of motherboards, software and other computer platform components to support its business; if AMD loses Microsoft Corporation's support for its products or other software vendors do not design and develop software to run on AMD's products, its ability to sell its products could be materially adversely affected; and AMD's reliance on third-party distributors and add-in-board partners subjects it to certain risks. 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 Quarterly Report on Form 10-Q for the quarter ended March 30, 2019.

**About AMD**

For 50 years AMD has driven innovation in high-performance computing, graphics and visualization technologies — the building blocks for gaming, immersive platforms and the datacenter. Hundreds of millions of consumers, leading Fortune 500 businesses and cutting-edge scientific research facilities around the world rely on AMD technology daily to improve how they live, work and play. AMD employees around the world are focused on building great 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, Facebook and Twitter pages.

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[1] Suggested online retailer price in US dollars as of 7/7/2019.

[2] Testing by AMD Performance Labs as of 5/23/2019. AMD "Zen2" CPU-based system scored an estimated 15% higher than previous generation AMD "Zen" based system using estimated SPECint®_rate_base2006 results. SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. See www.spec.org. GD-141

[3] Testing done by AMD performance labs 5/23/19, showing a geomean of 1.25x per/clock across 30 different games @ 4K Ultra, 4xAA settings. Performance may vary based on use of latest drivers. RX-327

[4] Testing done by AMD performance labs 5/23/19, using the Division 2 @ 25x14 Ultra settings. Performance may vary based on use of latest drivers. RX-325

[5] Testing conducted by AMD Performance Labs as of June 4th, 2019 on the 8GB Radeon™

RX 5700 on the following games: Apex Legends, Tom Clancy's The Division 2, Dota 2, Fortnite, Overwatch, PlayerUnknown's Battleground, and Tom Clancy's Rainbow Six Siege. Performance may vary. RS-295

[6] "Game Clock" is the expected GPU clock when running typical gaming applications, set to typical TGP (Total Graphics Power). Actual individual game clock results may vary. GD-147

[7] Testing by AMD performance labs using an AMD Ryzen™ 9 3900X and Core i9-9900K. All games tested at 1920x1080 with maximum in-game quality preset. Results may vary. RZ3-28

[8] Testing by AMD performance labs using an AMD Ryzen™ 9 3900X and Core i9-9900K. All games tested at 2560x1440 with maximum in-game quality preset. Results may vary. RZ3-29

[9] Testing by AMD performance labs using an AMD Ryzen™ 9 3900X and Core i9-9900K in: DaVinci Resolve, Adobe Premiere, Cinebench R20, Handbrake 1.1.1, LAME MP3 Encoder, and POV-Ray 3.7. Results may vary. RZ3-30

[10] Testing by AMD performance labs using an AMD Ryzen™ 9 3900X and Core i9-9900K, measuring wall power during Cinebench R20 nT. Results may vary. RZ3-31

[11] Testing by AMD performance labs using an AMD Ryzen™ 7 3800X and Core i7-9700K, measuring wall power during Cinebench R20 nT. Results may vary. RZ3-35

[12] Overclocking AMD processors, including without limitation, altering clock frequencies / multipliers or memory timing / voltage, to operate beyond their stock specifications will void any applicable AMD product warranty, even when such overclocking is enabled via AMD hardware and/or software. This may also void warranties offered by the system manufacturer or retailer. Users assume all risks and liabilities that may arise out of overclocking AMD processors, including, without limitation, failure of or damage to hardware, reduced system performance and/or data loss, corruption or vulnerability. GD-106

[13] Precision Boost Overdrive requires an AMD Ryzen Threadripper, AMD Ryzen 5 3000, AMD Ryzen 7 3000, or AMD Ryzen 9 3000 Series processor and a motherboard compatible with one or more of these processors. Because Precision Boost Overdrive enables operation of the processor outside of specifications and in excess of factory settings, use of the feature invalidates the AMD product warranty and may also void warranties offered by the system manufacturer or retailer. GD-135

[14] Though both are often measured in watts, it is important to distinguish between thermal and electrical watts. Thermal wattage for processors is conveyed via thermal design power (TDP). TDP is a calculated value that conveys an appropriate thermal solution to achieve the intended operation of a processor. Electrical watts are not a variable in the TDP calculation. By design, electrical watts can vary from workload to workload and may exceed thermal watts. GD-109

[15] Testing as of 05/14/2019 by AMD Performance Labs using an AMD Ryzen™ 5 3400G Processor and Intel Core i5-9400 in PCMark 10, Adobe Premiere, Speedometer, and SPECviewperf®. Results may vary with configuration. The class defined as graphics on a desktop processor. SPEC® and SPECviewperf are registered trademarks of Standard Performance Evaluation Corporation. See www.spec.org. PCO-002

[16] Testing as of 05/14/2019 by AMD Performance Labs using an AMD Ryzen™ 5 3400G Processor and Intel Core i5-9400 in 9 game titles. Results may vary with configuration. PCO-003

[17] Radeon FreeSync technology requires a monitor and AMD Radeon™ graphics, both with FreeSync support. See www.amd.com/freesync for complete details. Confirm capability with your system manufacturer before purchase. GD-127

[18] Offer available through participating retailers for eligible purchases made July 1, 2019 through March 10, 2020 or when supply of coupon codes is exhausted, whichever occurs first. Void where prohibited. **Game Pass for PC**: Over 100 PC Games available starting August 2019. Gears 5 available fall 2019. Game Pass code must be redeemed by June 30, 2020. Limit one promotional 3-month subscription per Microsoft account over a 12-month period. Requires the Xbox (beta) app and Windows 10 (with updates). Age restrictions and system requirements apply. Game catalog varies over time. Learn more at Xbox.com/gamepass. Gears 5 is rated ESRB “M” for Mature and PEGI is not yet rated. May contain content inappropriate for children. Please consult with ESRB.org, PEGI.info, or your regional game ratings organization.

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