January 6, 2020

AMD Announces World's Highest Performance Desktop and Ultrathin Laptop Processors at CES 2020

– AMD Ryzen™ 4000 Series mobile processors to power laptops from top OEMs featuring the most powerful[1] and most portable[2] mobile computing experiences with advanced power efficiency[3] over previous generation –

– AMD introduces world's first 64-core HEDT processor[4], AMD Ryzen™ Threadripper™ 3990X with leadership performance[5] –

LAS VEGAS, Jan. 06, 2020 (GLOBE NEWSWIRE) -- **CES 2020 –** Today, AMD (NASDAQ: AMD) announced the world's first x86 8-core ultrathin laptop processors[1] as part of the AMD Ryzen™ 4000 Series Mobile Processor family, built on the groundbreaking "Zen 2" core architecture with innovative 7nm process technology and optimized high performance Radeon™ graphics in an SOC design. As the third generation of AMD Ryzen Mobile processors, the new 4000 Series provides unprecedented performance levels, significant design enhancements, and incredible power efficiency for ultrathin and gaming laptops. AMD also announced the AMD Athlon™ 3000 Series Mobile Processor family powered by "Zen" architecture, enabling modern computing experiences with real performance for a wider range of laptop users. Consumers will be able to purchase the first AMD Ryzen 4000 Series and Athlon 3000 Series powered laptops from Acer, Asus, Dell, HP, Lenovo, and others starting in Q1 2020, with more systems expected to launch throughout 2020 with global OEM partners.

In addition, AMD announced the highly anticipated 64-core, 128-thread AMD Ryzen™ Threadripper™ 3990X will be available globally expected February 7, 2020. Purpose-built to enable extreme performance for 3D, visual effects, and video professionals, the 3990X delivers up to 51% faster rendering performance than the AMD Ryzen Threadripper 3970X processor[5].

"We are kicking off 2020 with a bang, bringing unmatched performance, graphics, and longer battery life to ultrathin and gaming laptop users with the new AMD Ryzen 4000 Series Mobile Processors," said Saeid Moshkelani, senior vice president and general manager, AMD Client Compute. "We saw historic portfolio growth for AMD Ryzen™ Mobile-powered systems in 2019, and we are already on track to bring wider system adoption of AMD Ryzen 4000 Series Mobile Processors in 2020 from major OEM partners, offering twice the power-efficiency from the previous generation[3]."

AMD Ryzen 4000 Series Mobile Processors with Radeon™ Graphics
Featuring up to 8 cores and 16 threads, the AMD Ryzen 4000 U-Series Mobile Processors provide incredible responsiveness and portability, delivering disruptive performance for

ultrathin laptops with a configurable 15W TDP[6]. Additionally, with more than 90 million laptop gamers and creators[7], the AMD Ryzen 4000 H-Series Mobile Processors are the new standard for gaming and content creation in innovative, thin and light laptops with a configurable 45W TDP[6].

The new AMD Ryzen 7 4800U offers:

- Up to 4% greater single-thread performance and up to 90% faster multithreaded performance than the competition[8]
- Up to 18% faster graphics performance than the competition[9]

The new AMD Ryzen 7 4800H offers:

- Up to 5% greater single-threaded and up to 46% greater multi-threaded performance than the competition[10]
- Up to 25% faster 4K video encoding using Adobe Premier than the competition[11]
- Up to 39% greater gameplay physics simulation performance than the competition[12]

AMD also detailed AMD SmartShift technology, allowing users to harness Ryzen 4000 Mobile Processors, Radeon Graphics, and the latest AMD Radeon Software Adrenalin 2020 edition, advancing computing experiences by efficiently optimizing performance as needed taking gaming experiences to unprecedented new levels. By dynamically shifting power between the Ryzen processor and Radeon graphics, AMD SmartShift technology seamlessly delivers up to 10% greater gaming performance[13] and up to 12% more content creation performance[14].

3rd Gen AMD Ryzen Threadripper 3990X Processor
AMD also launched the highly anticipated AMD Ryzen Threadripper 3990X, the world's first 64-core desktop processor. Creators around the world can purchase the industry-leading processor from participating global retailers and system integrators with on-shelf availability expected February 7, 2020.

With an unprecedented amount of single-socket compute performance in a desktop platform, the AMD Ryzen Threadripper 3990X will be the definitive solution for digital content creation professionals working with 3D animation, raytraced VFX, and 8K video codecs delivering;

- Up to 51% greater performance than the industry-leading Ryzen Threadripper 3970X in 3D Ray Tracing with the MAXON Cinema4D Renderer[5]
- An historic Cinebench R20.06 score of 25,399 points for a single processor[5]

AMD Athlon 3000 Series Mobile Processors with Radeon Graphics
Bringing consumers more choice, the new AMD Athlon 3000 Series Mobile Processor family expands the reach of the powerful "Zen" architecture to mainstream notebooks. Athlon 3000 Series enables modern computing experiences such as Windows Hello and Cortana, real performance for day-to-day productivity, and Full HD streaming. Offering up to 86% faster graphics and up to 51% better productivity performance over the competition[15,16], systems are slated to be available from global OEMs in early 2020.

Product Specifications: Ryzen™ 4000 Series & Athlon™ 3000 Series Mobile Processors

MODEL	CORES/ THREADS	cTDP[6] (Watts)	BOOST[17]/ BASE FREQ. (GHz)	RADEON™ GRAPHICS	GPU CORES	L2 / L3 CACHE (MB)
AMD Ryzen™ 7 4800H	8C/16T	45W	Up to 4.2 / 2.9 GHz	Radeon™ Graphics	7	12
AMD Ryzen™ 5 4600H	6C/12T	45W	Up to 4.0 / 3.0 GHz	Radeon™ Graphics	6	11
AMD Ryzen™ 7 4800U	8C/16T	15W	Up to 4.2 / 1.8 GHz	Radeon™ Graphics	8	12
AMD Ryzen™ 7 4700U	8C/8T	15W	Up to 4.1 / 2.0 GHz	Radeon™ Graphics	7	12
AMD Ryzen™ 5 4600U	6C/12T	15W	Up to 4.0 / 2.1 GHz	Radeon™ Graphics	6	11
AMD Ryzen™ 5 4500U	6C/6T	15W	Up to 4.0 / 2.3 GHz	Radeon™ Graphics	6	11
AMD Ryzen™ 3 4300U	4C/4T	15W	Up to 3.7 / 2.7 GHz	Radeon™ Graphics	5	6
AMD Athlon™ Gold 3150U	2C/4T	15W	Up to 3.3 / 2.4 GHz	Radeon™ Graphics	3	5
AMD Athlon™ Silver 3050U	2C/2T	15W	Up to 3.2 / 2.3 GHz	Radeon™ Graphics	2	5

Product Specification: 3rd Gen AMD Ryzen Threadripper 3990X

MODEL	CORES/ THREADS	TDP[6] (WATTS)	BOOST[17]/ BASE FREQUENCY (GHZ)	TOTAL CACHE (MB)	PCIe® 4.0 LANES (processor + AMD TRX40)	SEP (USD)[18]	AVAILABILITY
AMD Ryzen™ Threadripper™ 3990X	64/128	280W	Up to 4.3 / 2.9	288	88 (72 useable)	$3,990	Feb 7, 2020

Supporting Resources

- Learn more about the new AMD Ryzen™ 4000 Series Mobile Processors
- Learn more about the new AMD Athlon™ 3000 Series Mobile Processors
- Learn more about AMD SmartShift technology
- Learn more about the AMD Ryzen™ Threadripper™ 3990X
- 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 the features, functionality, availability, timing, deployment and expectations of AMD Ryzen™ 4000 Series Mobile Processors, AMD Athlon™ 3000 Series Mobile Processor, and the AMD Ryzen™ Threadripper™ 3990X, 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," "intends," "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 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; AMD has a wafer supply agreement with GF with obligations to purchase all of its microprocessor and APU product requirements, and a certain portion of its GPU product requirements, from GLOBALFOUNDRIES Inc. (GF) with limited exceptions. If GF is not able to satisfy AMD's manufacturing requirements, its business could be adversely impacted; 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 uncertainty may adversely impact AMD's business and operating results; AMD's operations are subject to political, legal and economic risks and natural disasters which could have a material adverse effect on AMD; government actions and regulations such as export administration regulations, tariffs and trade protection measures, may limit AMD's ability to export its products to certain customers; AMD 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 and reputation; 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 its ability to operate its business; the markets in which AMD's products are sold are highly competitive; the conversion of the 2.125% Convertible Senior Notes due 2026 may dilute the ownership interest of its 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 AIB 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 September 28, 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] Demonstrated by Ryzen 7 4800 series mobile processor having 8 cores, while comparable competitive product (Intel 10th generation mobile processors) offer up to 6 cores. RM3-05

[2] Testing as of 12/19/19 by AMD performance labs. RM3-124

[3] Testing by AMD Performance Labs as of 11/22/2019 utilizing the Ryzen 7 4800U vs. 2nd Gen Ryzen 7 3700U in Cinebench R20 Benchmark. Results may vary. RM3-123

[4] Based on AMD internal analysis, December 2019. CPK-24

[5] Testing by AMD Performance Labs as of 12/17/2019 in Cinebench R20.06 using an AMD Ryzen Threadripper 3990X and AMD Ryzen Threadripper 3970X. 3990X system configured with 8x32GB DDR4-2667 @ 20-19-19-43; 3970X system configured with 4x16GB DDR4-3600 @ 16-16-16-36; Performance evaluated using Windows 10 18362.476. Results may vary. CPK-25

[6] 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

[7] JPR research, December 2019

[8] Testing by AMD Performance Labs as of 12/09/2019 utilizing an AMD Ryzen™ 4800U reference system and a Dell XPS 7390 system with Intel® Core i7-1065G7 processor in Cinebench R20 1T and nT. Results may vary. RM3-63

[9] Testing by AMD Performance Labs as of 12/09/2019 utilizing an AMD Ryzen™ 4800U reference system and a Dell XPS 7390 system with Intel® Core i7-1065G7 processor in 3DMark11 Performance. Results may vary. RM3-75

[10] Testing by AMD Performance Labs as of 12/09/2019 utilizing an AMD Ryzen™ 4800H reference system and an ASUS Zephyrus-M GU502GV system with Intel® Core i7-9750H processor in Cinebench R20 1T and nT. Results may vary. RM3H-1

[11] Testing by AMD Performance Labs as of 12/09/2019 utilizing an AMD Ryzen™ 4800H reference system and an ASUS Zephyrus-M GU502GV system with Intel® Core i7-9750H processor in Adobe Premiere. Results may vary. RM3H-4

[12] Testing by AMD Performance Labs as of 12/09/2019 utilizing an AMD Ryzen™ 4800H

reference system and an ASUS Zephyrus-M GU502GV system with Intel® Core i7-9750H processor in 3DMark Firestrike Physics. Results may vary. RM3H-2

[13] Testing done by AMD performance labs 12/20/2019 on Ryzen 7 4800H with Radeon RX 5600M, driver 19.40-191203a, with 16GB DDR4-3200Mhz RAM. PC manufacturers may vary configurations yielding different results. Performance may vary. RR-002

[14] Testing done by AMD performance labs 12/20/2019 on Ryzen 7 4800H and Radeon RX 5600M. PC manufacturers may vary configurations yielding different results. Performance may vary. RR-001

[15] Testing by AMD Performance Labs as of 11/22/2019 utilizing the Athlon Gold 3150U vs. Intel Pentium Gold 5405U in 3DMark 11 Performance. Performance may vary. 3DMark is a registered trademark of Futuremark Corporation. DAL-3

[16] Testing by AMD Performance Labs as of 11/22/2019 utilizing the Athlon Gold 3150U vs. Intel Pentium Gold 5405U in Cinebench R15 1T and nT. Performance may vary. DAL-1

[17] 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

[18] AMD Suggested Etail Price in USD. Price subject to change.

Source: Advanced Micro Devices