October 26, 2017

AMD Introduces New Ryzen Mobile Processors, the World's Fastest Processor for Ultrathin Notebooks(1)

New Ryzen 7 2700U and Ryzen 5 2500U Mobile Processors with Radeon Vega Graphics Deliver Blazingly Fast Performance, Fluid Graphics Rendering, and Optimal Efficiency in Compelling Form Factors

SUNNYVALE, Calif., Oct. 26, 2017 (GLOBE NEWSWIRE) -- AMD (NASDAQ:AMD) today announced the introduction of the AMD Ryzen™ mobile processor, previously codenamed the "Raven Ridge" mobile APU, providing leadership performance and a complete entertainment experience with optimal efficiency for premium 2-in-1s, convertibles and ultrathin notebook computers. With a configurable 15-watt TDP, the AMD Ryzen™ 7 2700U and AMD Ryzen™ 5 2500U processors combine the architecture of award-winning "Zen" x86 cores--featuring AMD SenseMI Technology[2] processor-level intelligence--with revolutionary Radeon "Vega" graphics in a System-on-Chip design to achieve unprecedented ultrathin notebook performance. The AMD Ryzen 7 2700U is the fastest processor for ultrathin notebooks, with up to 44% more multi-threaded CPU performance[3] as well as up to 161% more graphics performance[4] than the competition[3,4].

"We promised to bring innovation and competition back to every segment of the PC market in 2017, and today marks the fulfillment of that promise for consumer notebooks following our successful roll-out across the consumer, commercial and high-end desktop markets earlier this year," said Jim Anderson, senior vice president and general manager, Computing and Graphics Group, AMD. "Ryzen™ mobile processors offer leadership performance for everyday activities, multi-tasking, and advanced workloads alike, all while enabling amazing battery life. We are pleased to deliver the world's fastest processor for ultrathin notebooks, offering consumers the opportunity to get the most out of their digital lives through our OEM partners' notebook designs."

Powerful Performer

Consisting of up to 4 cores and 8 threads, Ryzen™ mobile processors include AMD SenseMI Technology and are designed for leadership performance in a sleek form factor. The AMD Ryzen™ 7 2700U processor is the world's fastest for ultrathin notebooks, featuring a 15W nominal processor TDP[3,4]. In addition, AMD Ryzen™ mobile processors provide blazing fast performance compared to the previous AMD mobile processor generation, with;

- Up to 3X the CPU performance[5]
- up to 2.3X the GPU performance[6]
- and up to 58% less power consumption[7]

Ryzen mobile processors also introduce for the first time:

- new Precision Boost 2 technology, which accelerates processor performance in workloads using from one to many CPU cores[8] and
- Mobile Extended Frequency Range (mXFR)[9], which raises sustained performance in notebooks with great cooling solutions on notebooks certified for “Ultimate XFR Performance”

Completely Entertaining
The AMD Ryzen™ Processor with Radeon™ Vega Graphics provides elite GPU performance;

- Delivers smooth and playable framerates at 1080p in popular eSports titles such as League of Legends™, Overwatch™, CS:GO™ and DOTA™ 2, in an ultrathin form factor[10]
- Ready to power the most advanced & beautiful displays including HDR[11], Radeon™ FreeSync™ 2[12], and 4K[13] monitors

Efficiently Designed

- AMD is ahead of pace for its 25X20 initiative, with the AMD Ryzen™ 7 2700U processor enabling a 5.86X energy efficiency improvement since the beginning of the initiative[14]
- AMD Ryzen™ mobile processor is targeting up to a 2X battery life improvement[15]

AMD Ryzen™ Processor with Radeon™ Vega Graphics

Model	CPU Cores	Threads	Max Clock (GHz)	Graphics Compute Units[8]	Max GPU Clock (MHz)	L2/L3 Cache (MB)	cTDP (Watts)
Ryzen™ 7 2700U with Radeon™ Vega[10] Graphics	4	8	3.8	10	1300	6	15W Nominal
Ryzen™ 5 2500U with Radeon™ Vega[8] Graphics	4	8	3.6	8	1100	6	15W Nominal

In the coming weeks, initial systems powered by Ryzen™ mobile processors are slated to be available from top manufacturers including Acer, HP and Lenovo, with further platform updates expected from Dell, Asus and other OEMs in early 2018.

“We're excited to be among the first to bring the AMD Ryzen™ mobile processor with Radeon™ Vega Graphics to the market with our Acer Swift 3 notebook," said Jerry Kao, President of IT Products Business, Acer. "Designed for a fast-paced world where people are increasingly mobile, the Swift 3 with the Ryzen™ mobile processor will help people power through their day and achieve more on-the-go.”

“As the first to bring Ryzen™ 7 1700 8-core processors to gaming notebooks with the Asus ROG Strix GL702ZC, Asus looks forward to introducing new notebook designs based on the powerful and efficient new Ryzen™ mobile processors,” said S.Y. Shian, Chief Officer & Corporate Vice President, ASUSteck Computer Inc.

“We live in a fast-paced world where everyone is on-the-go, requiring productivity in thin and light devices,” said Raza Haider, Vice President, Inspiron & Vostro, Dell Product Group, Dell.

“Dell’s Inspiron line offers affordable and versatile computing in beautiful form factors. Starting in early 2018 we are adding AMD Ryzen™ mobile processors to select Inspiron laptops bringing more options for powering cinematic and computing experiences while on the go.”

“HP continues to deliver PCs that drive amazing experiences for our customers,” said Kevin Frost, vice president and general manager, Consumer Personal Systems, HP Inc. “By offering AMD’s Ryzen™ Processor with Radeon™ Vega Graphics with our exceptionally gorgeous HP ENVY x360, users will experience a device that inspires creativity with superb performance.”

“At Lenovo, we’re constantly working on bringing powerful, intuitive computing experiences to our customers,” said Jeff Meredith, senior vice president and general manager of Lenovo Consumer PCs and Smart Devices. “People today need the right tools to get things done on the go. That’s why we’re excited to bring to market the IdeaPad 720S laptop powered by the AMD Ryzen™ mobile processor. The IdeaPad 720S’ powerful processor, feather-light design and all-day battery life is made for today’s mobile multitaskers.”

Supporting Resources

- Learn more about AMD Ryzen™ Mobile processors at AMD.com/RyzenMobile
- Learn more about the “Zen” core architecture at AMD.com/Zen
- Learn more about the AMD Radeon™ RX Vega Series
- Learn more about the AMD 25X20 Energy Efficiency Initiatives
- Learn more about AMD Products, Solutions, and Innovations
- Become a fan of AMD on Facebook
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About AMD

For more than 45 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.

Cautionary Statement

This press release contains forward-looking statements concerning Advanced Micro Devices, Inc. (AMD) including the features, functionality, availability, timing, deployment, and expected benefits of the AMD Ryzen™ Processor with Radeon™ Vega Graphics and AMD’s goal of making AMD processors with integrated GPUs 25X more energy efficient by 2020, 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 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; 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 uncertainty may adversely impact AMD's business and operating results; the markets in which AMD's products are sold are highly competitive; 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; AMD's issuance to West Coast Hitech L.P. (WCH) of warrants to purchase 75 million shares of its common stock, if and when exercised, will dilute the ownership interests of its existing stockholders, and 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 July 1, 2017.

Vega is a codename for an AMD architecture and is not a product name.

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[1] “Processor for ultrathin laptops” defined as 15W nominal processor TDP. Based on testing of the AMD Ryzen™ 7 2700U, AMD Ryzen™ 5 2500U, and Core i7-8550U 15W mobile processors as of 10/6/2017. Performance based on Cinebench R15 nT (“CPU performance”) and 3DMark® TimeSpy (“GPU performance”) in order of AMD Ryzen 7 2700U, AMD Ryzen 5 2500U and Intel 8550U. AMD Ryzen™ 7 2700U: AMD Reference, AMD Ryzen™ 7 2700U with Radeon™ Vega 10 Processor Graphics, 8GB DDR4-2400 RAM, Samsung 850 PRO 512GB SATA SSD, Windows 10 Pro RS2, Graphics driver 23.20.768.9, 26-Sep-2017

AMD Ryzen™ 5 2500U: AMD Reference, AMD Ryzen™ 5 2500U with AMD Radeon™ Vega 8 Mobile Graphics, 8GB DDR4-2400 RAM, Samsung 850 PRO 512GB SATA SSD, Windows 10 Pro RS2, Graphics driver 23.20.768.9, 26-Sep-2017

Core i7-8550U: Acer Spin 5, Core i7-8550U with Intel UHD Graphics 620, 8GB DDR4-2400 RAM, MTFDDAV256TBN - M.2 Sata SSD, Windows 10 Pro RS2, Graphics driver 22.20.16.4771, 12-Aug-2017
Cinebench R15 nT results: 719/144%, 598/120%, 498/100%. 3DMark TimeSpy results: 915/261%, 812/232%, 350/100%. 50:50 weighted sum of relative CPU and GPU performance deltas: 100% for 8550U, 176% for 2500U, 203% for 2700U. Performance results may vary with configuration and driver versions. RVM-13

[2] AMD SenseMI technology is built into all Ryzen processors, but specific features and their enablement may vary by product and platform. Learn more at http://www.amd.com/en/technologies/sense-mi. mXFR enablement must meet AMD requirements. Not enabled on all notebook designs. Check with manufacturer to confirm “amplified mXFR performance” support.

[3] Based on AMD testing as of 9/25/2017. System configuration(s): AMD Reference Motherboard (Ryzen™ 7 2700U), Acer Spin 5 (8550U), HP ENVY X360 (7500U), 2x4GB DDR4-2400, Samsung 850 Pro SSD, Windows 10 x64 1703, 1920x1080. Intel Graphics Driver: 22.20.16.4691. AMD Graphics Driver: 23.20.768.9. Cinebench R15 1t/nT scores: 144/719 (2700U) vs. 159/498 (8550U) vs. 147/325 (7500U). Cinebench R15 1t scores vs. Ryzen™ 7 2700U Baseline of 144: 7500U = 102%, 8550U = 110%. Ryzen™ 7 2700U Cinebench R15 nT score of 719 is 221% of 7500U and 144% of 8550U. Different configurations may yield different results.

[4] Based on AMD testing as of 9/25/2017. Common system configurations: Samsung 850 Pro SSD, Windows 10 x64 1703, 1920x1080; Intel Graphics Driver: 22.20.16.4691; AMD Ryzen™ mobile APU Graphics Driver: 23.20.768.9; AMD FX-9800P Graphics Driver: 22.19.662.4; AMD FX-9800P configured in HP ENVY X360 (1x8GB DDR4-2133). AMD Ryzen™ 7 2700U configured in AMD reference platform (2x4GB DDR4-2400). Core i7-8550U configured in Acer Swift 3 (2x4GB DDR4-2400). Core i7-7500U configured in HP ENVY X360 (2x4GB DDR4-2400). Graphics results measured with 3DMark® TimeSpy. Core i7-8550U score (350) is baseline 100%. Core i7-7500U score (377) is 107% of baseline. AMD FX-9800P score (400) is 114% of baseline. AMD Ryzen™ 7 2700U score (915) is 261% of baseline. Different configurations may yield different results.

[5] Testing by AMD Performance labs as of 10/05/2017. PC manufacturers may vary configurations yielding different results. Performance may vary with driver versions. AMD Ryzen™ 7 2700U: AMD Reference, AMD Ryzen™ 7 2700U with Radeon™ Vega 10 Processor Graphics, 8GB DDR4-2400 RAM, Samsung 850 PRO 512GB SATA SSD, Windows 10 Pro RS2, Graphics driver 23.20.768.9, 26-Sep-2017. AMD FX™ 9800P: HP 81AA, AMD FX™ 9800P with Radeon™ R7 Mobile Graphics, 8GB DDR4-2133 RAM, Samsung 850 PRO 512GB SATA SSD, Windows 10 Pro RS2, Graphics driver 22.19.662.4, 19-Jul-2017. Cinebench R15 nT is used to simulate CPU performance; the AMD Ryzen™ 7 2700U scored 719, while the FX 9800P scored 240 for a benchmark score comparison of 719/240 = 3.00X or 200% more. RVM-16

[6] Testing by AMD Performance labs. PC manufacturers may vary configurations yielding different results. Performance may vary with driver versions. AMD Ryzen™ 7 2700U: AMD Reference, AMD Ryzen™ 7 2700U with Radeon™ Vega 10 Processor Graphics, 8GB DDR4-2400 RAM, Samsung 850 PRO 512GB SATA SSD, Windows 10 Pro RS2, Graphics driver 23.20.768.9, 26-Sep-2017. AMD FX™ 9800P: HP 81AA, AMD FX™ 9800P with Radeon™ R7 Mobile Graphics, 8GB DDR4-2133 RAM, Samsung 850 PRO 512GB SATA SSD, Windows 10 Pro RS2, Graphics driver 22.19.662.4, 19-Jul-20173DMark® Time Spy is used to simulate graphics performance; the AMD Ryzen™ 7 2700U scored 915, while the AMD FX™ 9800P scored 400 for a benchmark score comparison of 915/400 = 2.29X or 129% more performance. RVM-17

[7] Based on AMD testing as of 9/28/2017. System configuration(s): AMD Reference Motherboard (2700U), HP ENVY X360 (FX-9800P/"7th Gen APU"), Samsung 850 Pro SSD, Windows 10 x64 1703, 1920x1080. AMD Ryzen™ 7 2700U Graphics Driver: 23.20.768.9. AMD FX-9800P Graphics Driver: 22.19.662.4. 1x8GB DDR4-2133 (AMD FX-9800P). 2x4GB DDR4-2400 (AMD Ryzen™ 7 2700U). Power Consumption defined as joules of power consumed during a complete run of Cinebench R15 nT: AMD FX™ 9800P = 3782 joules (100%) vs. AMD Ryzen™ 7 2700U =1594J (58% less). Different configurations may yield different results RVM-25

[8] AMD Radeon™ and FirePro™ GPUs based on the Graphics Core Next architecture consist of multiple discrete execution engines known as a Compute Unit ("CU"). Each CU contains 64 shaders ("Stream Processors") working together. GD-78

[9] mXFR enablement must meet AMD requirements. Not enabled on all notebook designs. Check with manufacturer to confirm "amplified mXFR performance" support.

[10] Based on AMD testing as of 9/25/2017. System configuration(s): HP ENVY X360, AMD Ryzen™ 7 2700U, 2x4GB DDR4-2400, Samsung 850 Pro SSD, Windows 10 x64 1703, Graphics Driver: 17.30.1025, BIOS F11.

[11] HDR content requires that the system be configured with a fully HDR-ready content chain, including: graphics card, monitor/TV, graphics driver and application. Video content must be graded in HDR and viewed with an HDR-ready player. Windowed mode content requires operating system support. GD-96

[12] FreeSync 2 does not require HDR capable monitors; driver can set monitor in native mode when FreeSync 2 supported HDR content is detected. Low-latency HDR only attainable when using a FreeSync 2 API enabled game or video player and content that

uses at least 2x the perceivable brightness and color range of sRGB, and using a FreeSync 2 qualified monitor. Based on AMD internal testing as of November 2016. GD-105.

[13] Requires 4K display and content. Supported resolution varies by GPU model and board design; confirm specifications with manufacturer before purchase. GD-113

[14] Based on AMD internal testing as of 10/12/2017. Relative energy efficiency based on a 50:50 weighted average of CPU+GPU performance (variable "C"), as evaluated by Cinebench R15 nT and 3DMark 11 scores, divided by typical energy usage (variable "E") as defined by: ETEC (Typical Energy Consumption for notebook computers), Energy Star Program Requirements Rev 6.1 10/2014. AMD "Kaveri" represents the baseline of 1.0X for CPU, GPU, and ETEC. AMD "Carrizo" efficiency 1.23C/0.35E=3.51X. AMD "Bristol Ridge" efficiency 1.36C/0.34E=3.97X. AMD "Raven Ridge" efficiency 2.56E/0.44E=5.86X. Scores in order of Cinebench R15 nT/3DMark 11 P Score: "Kaveri" 232/2142 (100%), "Carrizo" 277/2709 (123%), "Bristol Ridge" 279/3234 (136%), "Raven Ridge" 719/4315 (256%). Results may vary with configuration and driver versions. RVM-21

System configurations:

"Kaveri"	**"Carrizo"**	**"Bristol Ridge"**	**"Raven Ridge"**
AMD Reference Platform	AMD Reference Platform	AMD Reference Platform	AMD Reference Platform
AMD FX-7600P	AMD FX-8800P	AMD FX-9830P	AMD Ryzen™ 7 2700U
2x4GB DDR3L-1600	2x2GB DDR3-1866	2x4GB DDR4-2133	2x4GB DDR4-2400
Crucial CT256M4SSD2	Crucial CT256M550SSD1	Crucial CT256M4SSD2	Samsung 850 Pro SSD
Windows 8.1 x64 9600	Windows 10 x64 10586	Windows 10 x64 10586	Windows 10 x64 1703
Graphics Driver 13.350.0.0	Graphics Driver 21.19.137.514	Graphics Driver 21.19.137.514	Graphics Driver: 22.19.655.2
1366x768	1366x768	1366x768	1920x1080

[15] Based on internal AMD testing as of 10/11/2017. System configuration: AMD Reference Platforms, AMD Ryzen™ 7 2700U, AMD FX-9800P, 2x4GB DDR4-2400, graphics driver 17.30.1025, Windows 10 x64 (1703), 50Wh battery. Battery life increases: 7.45 to 10.3 hours for 4K HEVC (+38%); 10.6 to 11.1 hours for 1080p H.264 (+4.7%); 10.7 to 12.2 hours for MobileMark 14 (+14%). Results may vary with configuration and driver versions. RVM-22

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