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AMD Launches the Radeon Rebellion With the Radeon(TM) RX 480 Graphics Card, Available Now

PC Ecosystem, Gamers and Game Developers Commend Radeon™ RX 480 for Redefining Performance/\$ in Its Class and Delivering the Most Compelling Solution for Premium VR Experiences

SUNNYVALE, CA -- (Marketwired) -- 06/29/16 -- Today a revolution in PC gaming and VR began as [AMD](#) (NASDAQ: AMD) launched the Radeon™ RX 480 graphics card designed to deliver enthusiast-level gaming performance and features, the world's most advanced graphics technology and an extraordinary value proposition to fans and gamers around the world. The Radeon™ RX 480 introduces premium technology engineered to deliver the best performance/\$ in its class¹, democratize VR and deliver a wide range of future-proof technologies² supporting current and forthcoming game and video standards. The cards will start at SEP \$199 USD for the Radeon™ RX 480 4GB card, and SEP \$239 for the Radeon™ RX 480 8GB card. Details regarding the new Radeon™ RX 480 graphics card and related technologies are available at AMD's new gamer-focused website, [Radeon.com](#).

"Our message to gamers everywhere is that the Radeon™ RX 480 is every bit as much your card as it is ours," said Raja Koduri, senior vice president and chief architect, Radeon Technologies Group, AMD. "We designed this technology by listening intently to you, the gamers who have bought and played on our graphics technology for years. We've worked tirelessly to produce something that satisfies the most discerning gamer, and delivers the ideal product at an impeccable price. We couldn't be more grateful for the reception we've received from gamers, customers, and technology partners who see what our engineering team has accomplished, and agree that with the Radeon™ RX Series, gaming and VR is truly #BetterRed."

Radeon™ RX 480 Reception

The global PC ecosystem has demonstrated enthusiastic support for the Radeon™ RX 480 graphics card. OEM and system integrator partners such as Alienware, HP, and Lenovo are praising the Radeon™ RX 480's capabilities.

Game and VR application developers including Bethesda, EA, and Ubisoft and VR headset manufacturers Oculus and HTC are applauding AMD for delivering on the promise of bringing flagship performance and features to the mass market, enabling them to greatly expand the reach of experiences they're developing.

Professional and casual gamers alike are also celebrating the launch, with AMD-sponsored eSports teams such as Fnatic and Evil Geniuses hailing the Radeon™ RX 480 as a triumph for PC gamers everywhere, and prominent video reviewers worldwide affirming the exceptional value of the graphics card across a wide range of games. To see some of the

industry-wide acclaim the Radeon™ RX 480 card is receiving at launch visit [Radeon.com here](#).

Radeon™ RX 480 Features

The Radeon™ RX 480 card packs an unprecedented amount of gaming and VR goodness into an incredible price point:

- **Premium technology engineered for unprecedented performance in its class** - The Radeon™ RX 480 8GB card features the most advanced graphics and gaming technologies ever seen in a GPU at \$239, delivering the best performance/\$ in its class. The revolutionary Polaris architecture, optimized for the 14nm FinFET process, drives spectacular improvements in performance and efficiency. It delivers more than 15 percent more performance per compute unit³, up to 2.8x the performance/Watt over AMD's Radeon R9 200 series graphics architecture⁴, and fuels up to 5.8 trillion calculations a second. More information on the advances in the Polaris architecture are available [here](#).
- **The most affordable solution for premium VR experiences** - Starting at SEP \$199 USD, the Radeon™ RX 480 4GB card is the most affordable solution for premium VR experiences, being both Oculus™ Rift- and Steam®VR-Ready.⁵ Utilizing LiquidVR™ technologies designed to provide smoother, more comfortable VR experiences, the Radeon™ RX 480 4GB card lowers the cost barrier to entry for PC VR making it affordable for millions of consumers. Visit [Radeon.com here](#) to learn more about how the Radeon™ RX 480 4GB card is helping to truly democratize VR.
- **Future-proof technologies²** - The Radeon™ RX 480 card continues the Radeon™ tradition of innovation being first to new process nodes, first in memory types and bandwidth, and first to support new gaming APIs. Gamers will enjoy the Radeon™ RX 480 card for a long time to come with a range of "future-proof" benefits including:
 - **Premium HD gaming in DirectX® 12 and Vulkan™** - The Radeon™ RX 480 card excels in DirectX® 12 and Vulkan™, APIs that are powering the future of gaming. Polaris architecture uniquely supports asynchronous compute for superior experiences in games and VR applications using these new APIs, and combined with [AMD FreeSync™ Technology](#)⁶, gamers can enjoy silky smooth framerates at 1440p resolution across the most demanding games. More information on gaming in DirectX® 12 and Vulkan™ with the Radeon™ RX 480 card is available [here](#).
 - **Next-generation display and video technologies** - The Radeon™ RX 480 card features HDMI® 2.0b, DisplayPort™ 1.3 HBR3, and DisplayPort™ 1.4 HDR supporting the new generation of high-resolution HDR and high-refresh displays enabling experiences such as FreeSync™ with high-refresh 4K, high refresh UltraWide, and single-cable 5K resolution computing at 60Hz. The Radeon™ RX 480 features AMD's most versatile decode accelerator ever, enabling beautiful HDR movies using 10-bit HEVC⁷ from the likes of Netflix and Amazon, accelerated H.264 video of streamers on Twitch, accelerated VP9 videos on sites like YouTube, and razor-sharp video calling using HEVC and MJPEG in applications like Skype. More information on the next-generation display and video technologies are available [here](#).⁸
 - **Unprecedented control with Radeon Software and the new Radeon WattMan** - Radeon Software complements the sophisticated hardware of the Radeon™ RX 480 graphics card, enabling the ultimate in performance, features and stability to

ensure an exceptionally smooth and fast out-of-box experience, and one that gets better with age as updates roll out. Launching today with the Radeon™ RX 480 card are nine new features of Radeon Software Crimson Edition designed to give users more control over multi-GPU, display, and power efficiency settings. Radeon WattMan, based on AMD OverDrive™ technology, enables users to take complete control over the Radeon™ RX 480 card with a redefined overclocking experience⁹ and a wide range of features including dynamic GPU frequency and voltage curves that allow users to customize both elements across seven states. Radeon WattMan also delivers a new histogram interface that enables recording of per-application data to easily track peak and average activity, clocks, temperature and fan speed. More information on the new Radeon WattMan is available [here](#).

Radeon RX 480 Availability

Radeon™ RX 480 graphics cards are available from retailers and e-tailers around the world starting today.¹⁰ For more information on where to buy, visit <http://shop.amd.com>.

Supporting Resources

- Watch the Radeon Rebellion trailer on [YouTube here](#)
- Watch more videos about the Radeon™ RX Series on [YouTube here](#)
- Read some of the industry-wide acclaim the Radeon™ RX 480 card is receiving at launch on [Radeon.com](#)
- Watch reviews of the Radeon™ RX 480 card on [YouTube here](#)
- Read about advances of the Polaris architecture on [Radeon.com](#)
- Read how the Radeon™ RX 480 card is helping [democratize VR on Radeon.com](#)
- Read more about gaming in DirectX® and Vulkan™ with the [Radeon™ RX 480 card on Radeon.com](#)
- Read about the next-generation [display and video technologies of the Radeon™ RX 480 card on Radeon.com](#)
- Read about the new [Radeon WattMan on Radeon.com](#)
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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.

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This press release contains forward-looking statements concerning Advanced Micro Devices, Inc. ("AMD") including, among other things, the benefits and expectations of AMD's Radeon RX Series 480 graphics cards, 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 presentation 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. Material factors that could cause actual results to differ materially from current expectations include, without limitation, the following: the possibility that Intel Corporation's dominance of the microprocessor market and its aggressive business practices may limit AMD's ability to compete effectively; AMD relies on GLOBALFOUNDRIES Inc. (GF) to manufacture all of its microprocessor and APU products and a certain portion of its GPU products, 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; global economic uncertainty may adversely impact AMD's business and operating results; AMD may not be able to generate sufficient cash to service its debt obligations or meet its working capital requirements; AMD has a substantial 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 (Secured Revolving Line of Credit) impose restrictions on AMD that may adversely affect its ability to operate its business; the completion and impact of its restructuring plan announced in October 2015, its transformation initiatives and any future restructuring actions could adversely affect it; the markets in which AMD's products are sold are highly competitive; uncertainties involving the ordering and shipment of AMD's products could materially adversely affect it; 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; 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 March 26, 2016.

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1. As of June 22 2016, leading performance/\$ in its class based on testing of the Radeon RX 480 8GB, Radeon R9 380X, Radeon R9 390, GeForce GTX 960, and GeForce GTX 970 in Doom in Ultra quality with TSSAA (8TX) at 1440p resolution, Fallout 4 in Ultra settings at 1440p resolution, Far Cry 4 in Ultra settings at 1440p resolution, The Witcher 3 in Ultra settings at 1440p resolution, Rise of the Tomb Raider in High settings at 1440p resolution in DirectX 11, Rise of the Tomb Raider in High settings in 1440p resolution in DirectX 12, Ashes of the Singularity in Extreme Quality settings at 1440p resolution in DirectX 12, The Division at Ultra settings at 1440p resolution, Crysis 3 in Very High settings with FXAA at 1440p resolution, Hitman at Ultra settings at 1440p in DirectX 12, Far Cry Primal in Very High settings at 1440p resolution, GTA V in Ultra settings at 1440p resolution, Battlefield 4 in Ultra settings at 1440p resolution on the naval map, Shadow of Mordor in Max settings at 1440p resolution, and Dirt Rally in High settings with 4xMSAA at 1440p resolution. The Radeon RX 480 8GB priced at SEP \$239 scored a mean FPS of 51.2, the Radeon RX 380X priced at \$229 scored a mean FPS of 39.2, the Radeon R9 390 priced at \$309 scored a mean FPS of 53.8, the GeForce GTX 960 priced at \$209.99 had a mean FPS of 33.5 and the GeForce GTX 970 priced at \$304.99 had a mean FPS of 50.1. Pricing as of June 22, 2016. See pcpartpicker.com for pricing information. Testing conducted by AMD performance labs as of June 22, 2016 on a test system using the cards above and an Intel Core i7-5960X, 16GB DDR4-2666, Gigabyte X99-UD4, Windows 10 x64 (build 10586), and Radeon Software Crimson Edition 16.5.2 and Nvidia driver 368.39. Performance may vary based on use of latest driver versions. Test results are not average and may vary, RX-18

2. Statement of "future-proof" refers to support of current and upcoming technology standards including 14nm FinFET process technology, DirectX®12 and Vulkan™ API support, new display technology, and experiences such as VR. "Future-proof" statement is not meant to serve as a warranty or indicate that users will never have to upgrade their graphics technology again. Support of current and upcoming technology standards described above has the potential to reduce frequency of graphics upgrades for some users. RX-5

3. Testing conducted by AMD performance labs as of May 18, 2016 on the Radeon RX 480 and Radeon R9 290 on a test system comprising Intel Core i7-5960X, 16GB DDR4-2666, Gigabyte X99-UD4, Windows 10 x64 (build 10586), Radeon Software Crimson Edition 16.5.2 using Ashes of Singularity, GTA V, Project Cars, Witcher, and Assassin's Creed Syndicate, all games tested at 1440p. Radeon RX 480 graphics (150W TGP/36 CU) vs. Radeon R9 290 graphics (275W TGP/40 CU) scores as follows: Ashes of the Singularity (44.19 FPS vs 46 FPS); GTA V (66.23 FPS vs. 66.44 FPS); Project Cars (48.99 FPS vs. 45.99 FPS); Witcher 3 (50.78 FPS vs. 50.13 FPS); Assassin's Creed Syndicate (50.51 FPS vs. 45.78 FPS). Average FPS of above game scores: 52.14 (Radeon RX 480) vs. 50.06 (Radeon R9 290). Discrete AMD Radeon™ GPUs and AMD 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 in unison (GD-78). CU efficiency formula = average FPS/# of CUs. Test results are not average and may vary. RX-4

4. Testing conducted by AMD Performance Labs as of May 10, 2016 on 3DMark 11 and 3DMark Firestrike using a test system comprising of an i7-4600M, 8GB, AMD Radeon driver 16.20. AMD Radeon R9 M280X (14CUs) scored 5700 and 3500 with a board power of 82W. AMD Radeon RX 480M (16CUs) scored 7200 and 4070 with a board power of 35W. Using Performance/Board power, the resulting average across the 2 different titles was a perf per watt of 2.8X vs the Radeon R9 M280X. RX-5

5. See <http://www.htcvive.com/ca/product-optimized/> and <https://www.oculus.com/en-us/rift/> for required minimum system specifications for different VR headsets.

6. AMD FreeSync™ technology is designed to eliminate stuttering and/or tearing in games and videos by locking a display's refresh rate to the framerate of the graphics card. Check with your component or system manufacturer for specific capabilities. AMD FreeSync™ technology compatible monitor, AMD Radeon™ Graphics and/or AMD A-series APU compliant with DisplayPort™ Adaptive-Sync required. AMD Catalyst™ 15.2 Beta (or newer) required. Adaptive refresh rates vary by display; check with your monitor manufacturer for specific capabilities. A list of supported hardware and compatible monitors is available at www.amd.com/freesync. GRT-2

7. HEVC acceleration is subject to inclusion/installation of compatible HEVC players

8. 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.

9. AMD graphics processors are intended to be operated only within their associated specifications and factory settings. Operating your AMD graphics processor outside of specification or in excess of factory settings, including but not limited to overclocking, may damage your graphics processor and/or lead to other problems, including but not limited to, damage to your system components (including your motherboard and components thereon (e.g. memory)), system instabilities (e.g. data loss and corrupted images), shortened graphics processor, system component and/or system life and in extreme cases, total system failure. AMD does not provide support or service for issues or damages related to use of an AMD graphics processor outside of graphics processor specifications or in excess of factory settings. You may also not receive support or service from your system manufacturer. DAMAGES CAUSED BY USE OF YOUR AMD OR AMD GRAPHICS PROCESSOR OUTSIDE OF SPECIFICATION OR IN EXCESS OF FACTORY SETTINGS ARE NOT COVERED UNDER YOUR AMD PRODUCT WARRANTY AND MAY NOT BE COVERED BY YOUR SYSTEM MANUFACTURER'S WARRANTY.

10. Not all models available in all countries -- check with your retailer.

Source: Advanced Micro Devices