AMD

AMD CONSUMER POCKET GUIDE

APRIL 2022

WHERE THE FUTURE STARTS.

When processing power meets brain power, the future comes alive. AMD makes the world's most advanced processors[1], but it's our customers that put high-performance computing to work and spark new ideas to life. This pushes us to innovate and propel the computing industry forward.

LAPTOPS & DESKTOPS

Whether working or playing, you'll get outstanding performance, immersive gaming, and impressive battery life with an advanced processor from AMD.

EMBEDDED AUTO SOLUTIONS

AMD Ryzen™ processors and Radeon™ graphics are powering the next generation of in-car entertainment, bringing rich multimedia and support for AAA gaming in the latest Tesla models.

DIGITAL CASINO GAMING

Embedded solutions provide eye-catching graphics for next-gen gaming with touch screens, 3D graphics, and multi-display solutions.

POPULAR GAMING CONSOLES

AMD partners with leading console developers like Sony and Microsoft to power the latest generation of consoles on the market.

ANIMATION & VISUAL EFFECTS STUDIOS

AMD technology helps power real-time rendering and stunning VFX for movie creators like Blur and Axis Studios.

NEXT-GEN SUPERCOMPUTING

Supercomputers powered by AMD technology can simulate, model, and advance the understanding of climate science, biomedical research, and more to help scientists solve some of the world's toughest challenges.

See 1. GD-203

AMD MOBILE PROCESSORS

AMD PROCESSORS FOR MOBILE

AMD delivers a clear and easy to sell processor lineup, with powerful performance from top to bottom. Find AMD processors powering thin and light laptops for every computing need–for productivity, entertainment, gaming, and content creation on-the-go.

MEET THE AMD PROCESSOR FAMILY

AMD RYZEN™ PROCESSORS

Advanced performance on the go for premium ultrathin and powerful gaming laptops

AMD ATHLON™ PROCESSORS

Responsive performance meets modern features for mainstream consumers

AMD C-SERIES PROCESSORS

Accelerated performance and long battery life for Chromebooks

The AMD Ryzen™ family of mobile processors includes **U-Series Processors** for ultrathin premium devices and **H-Series Processors** for high-performance gaming and creator laptops.

AMD RYZEN™ 6000 SERIES PROCESSORS

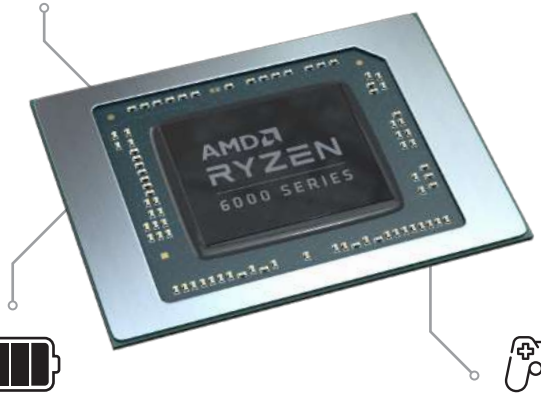
LAPTOPS

SPEED. ENDURANCE. INFINITE POSSIBILITIES.

AMD Ryzen™ 6000 Series processors bring new experiences to life in notebooks with exceptional speed, thin-and-light style, and incredible battery life.

EXPERIENCE PURE SPEED

Delivers the thrilling speed customers need with up to 30% faster ultrathin performance than last gen.[1]



FREEDOM TO UNPLUG

Go further with smart battery management designed for up to 24 hours battery life.[2]

WORLD'S MOST POWERFUL BUILT-IN GRAPHICS[3]

Game like never before on an ultrathin.

See 1. RMB-13, 2. RMB-15, 3. RMB-6

AMD RYZEN™ 6000 SERIES PROCESSORS

LAPTOPS

FEATURES & HIGHLIGHTS

AMD Ryzen™ 6000 Series processors elevate the premium user experience, bringing more power, enhanced security features, and an all-new connected platform.

6nm "Zen3+" Architecture
World's most advanced PC processor[1] for fast and efficient performance

Fastest AMD Ryzen™ Mobile Processor Yet
Up to 5GHz max boost[2] for the first time from AMD

AI-Powered Audio
AI-powered noise cancellation built right on chip to chat and listen distraction free*

AMD RDNA™ 2 Graphics Technology
Play AAA games at 1080p with new AMD Radeon™ 600M built-in graphics[3]

All-New Connected Platform*
A new platform with next-gen connectivity like PCIe® 4.0, DDR5, and high-speed USB4®

Windows 11 Security Features
First x86 processor to deliver the full breadth of new Windows 11 security features[4]

See 1. GD-203, 2. GD-150, 3. RMB-7, 4. RMB-24

* Not all systems feature all capabilities; check with system manufacturer for specific features & functions

BUILT TO OUTPERFORM

TAKE YOUR INSPIRATION ANYWHERE

AMD Ryzen™ processors offer a powerful solution for mobile creators, with options for ultrathin creator books to ultra enthusiast desktop replacements.

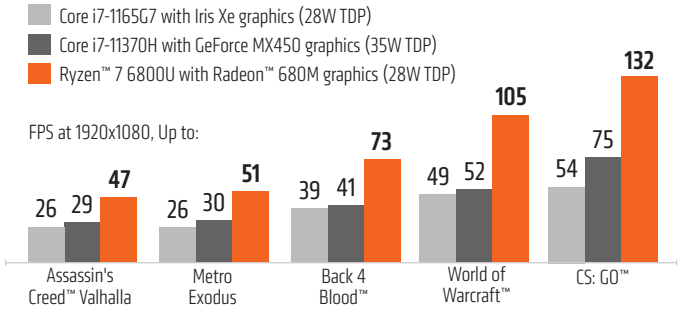
Ultrathin
AMD Ryzen™ 7 6800U
Up to **2X faster audio encoding** than competition[1]

Thin Enthusiast
AMD Ryzen™ 9 6980HS
Up to **90% faster video editing** than competition[2]

Ultra Enthusiast
AMD Ryzen™ 9 6900HX
Up to **3X faster rendering** than competition[3]

NEXT-LEVEL ULTRATHIN GAMING

AMD built-in graphics easily surpass Intel Iris Xe[4] and GeForce MX450 discrete graphics[5]



See endnotes 1. RMB-42, 2. RMB-44, 3. RMB-43, 4. RMB-7, 5. RMB-39

2022 AMD RYZEN™ PROCESSOR MODELS

PROCESSOR	ARCHITECTURE	CPU CORES/ THREADS	TOTAL CACHE	MAX BOOST (UP TO)[1]	TDP
AMD Ryzen™ 6000 Series Processors					
AMD Ryzen™ 9 6980HX Processor with Radeon™ 680M Graphics	6nm *"Zen 3+"*	8/16	20MB	5.0 GHz	45W+
AMD Ryzen™ 9 6980HS Processor with Radeon™ 680M Graphics	6nm *"Zen 3+"*	8/16	20MB	5.0 GHz	35W
AMD Ryzen™ 9 6900HX Processor with Radeon™ 680M Graphics	6nm *"Zen 3+"*	8/16	20MB	4.9 GHz	45W+
AMD Ryzen™ 9 6900HS Processor with Radeon™ 680M Graphics	6nm *"Zen 3+"*	8/16	20MB	4.9 GHz	35W
AMD Ryzen™ 7 6800H Processor with Radeon™ 680M Graphics	6nm *"Zen 3+"*	8/16	20MB	4.7 GHz	45W
AMD Ryzen™ 7 6800HS Processor with Radeon™ 680M Graphics	6nm *"Zen 3+"*	8/16	20MB	4.7 GHz	35W
AMD Ryzen™ 5 6600H Processor with Radeon™ 660M Graphics	6nm *"Zen 3+"*	6/12	19MB	4.5 GHz	45W
AMD Ryzen™ 5 6600HS Processor with Radeon™ 660M Graphics	6nm *"Zen 3+"*	6/12	19MB	4.5 GHz	35W
AMD Ryzen™ 7 6800U Processor with Radeon™ 680M Graphics	6nm *"Zen 3+"*	8/16	20MB	4.7 GHz	15-28W
AMD Ryzen™ 5 6600U Processor with Radeon™ 660M Graphics	6nm *"Zen 3+"*	6/12	19MB	4.5 GHz	15-28W
AMD Ryzen™ 5000 Series Processors					
AMD Ryzen™ 7 5825U Processor with Radeon™ Graphics	7nm *"Zen 3"*	8/16	20MB	4.5 GHz	15W
AMD Ryzen™ 5 5625U Processor with Radeon™ Graphics	7nm *"Zen 3"*	6/12	19MB	4.3 GHz	15W

Chart illustrates relative product positioning on key functionality and is not necessarily an indication of relative performance. Performance may vary.

2021 AMD RYZEN™ PROCESSOR MODELS

LAPTOPS

PROCESSOR	ARCHITECTURE	CPU CORES/ THREADS	TOTAL CACHE	MAX BOOST (UP TO)[1]	TDP
AMD Ryzen™ 9 5980HX Processor with Radeon™ Graphics	7nm *"Zen 3"*	8/16	20MB	4.8 GHz	45W+
AMD Ryzen™ 9 5980HS Processor with Radeon™ Graphics	7nm *"Zen 3"*	8/16	20MB	4.8 GHz	35W
AMD Ryzen™ 9 5900HX Processor with Radeon™ Graphics	7nm *"Zen 3"*	8/16	20MB	4.6 GHz	45W+
AMD Ryzen™ 9 5900HS Processor with Radeon™ Graphics	7nm *"Zen 3"*	8/16	20MB	4.6 GHz	35W
AMD Ryzen™ 7 5800H Processor with Radeon™ Graphics	7nm *"Zen 3"*	8/16	20MB	4.4 GHz	45W
AMD Ryzen™ 7 5800HS Processor with Radeon™ Graphics	7nm *"Zen 3"*	8/16	20MB	4.4 GHz	35W
AMD Ryzen™ 5 5600H Processor with Radeon™ Graphics	7nm *"Zen 3"*	6/12	19MB	4.2 GHz	45W
AMD Ryzen™ 5 5600HS Processor with Radeon™ Graphics	7nm *"Zen 3"*	6/12	19MB	4.2 GHz	35W
AMD Ryzen™ 7 5800U Processor with Radeon™ Graphics	7nm *"Zen 3"*	8/16	20MB	4.4 GHz	15W
AMD Ryzen™ 7 5700U Processor with Radeon™ Graphics	7nm *"Zen 2"*	8/16	12MB	4.3 GHz	15W
AMD Ryzen™ 5 5600U Processor with Radeon™ Graphics	7nm *"Zen 3"*	6/12	19MB	4.2 GHz	15W
AMD Ryzen™ 5 5500U Processor with Radeon™ Graphics	7nm *"Zen 2"*	6/12	11MB	4.0 GHz	15W
AMD Ryzen™ 3 5400U Processor with Radeon™ Graphics	7nm *"Zen 3"*	4/8	10MB	4.0 GHz	15W
AMD Ryzen™ 3 5300U Processor with Radeon™ Graphics	7nm *"Zen 2"*	4/8	6MB	3.8 GHz	15W

See 1. GD-150

Chart illustrates relative product positioning on key functionality and is not necessarily an indication of relative performance. Performance may vary.

AMD C-SERIES PROCESSORS FOR CHROMEBOOKS

RETHINK YOUR IDEA OF PERFORMANCE IN A CHROMEBOOK.

From browsing the web and running apps to streaming the latest entertainment, do it all with fast, responsive performance in the latest AMD-powered Chromebooks.

ACCELERATED PROCESSING

AMD-powered Chromebooks will boot quickly, and be fast and responsive, whether browsing the web or running multiple productivity apps.

VIBRANT GRAPHICS

Be ready for your favorite video streaming service or playing games from the Google Play store, with bright built-in AMD Radeon™ Graphics.

ENHANCED PORTABILITY AND CONNECTIVITY

Power-efficient processor technology enables thin and light Chromebooks with long-lasting battery.

PERFORMANCE

AMD RYZEN™ 7 3700C VS. PREVIOUS GEN A6-9220C

Browse the web up to **2.6X** as fast as previous gen[1]

Work across productivity apps up to **2X** as fast as previous gen[2]

Edit photos up to **2.5X** as fast as previous gen[3]

AMD C-SERIES MOBILE PROCESSORS LINEUP

AMD RYZEN

PREMIUM CHROMEBOOKS
Powerful multitasking

MODEL	CPU CORES/ THREADS	TOTAL CACHE	MAX BOOST (UP TO)[4]	TDP
AMD Ryzen™ 7 3700C	4/8	6MB	4.0 GHz	15W
AMD Ryzen™ 5 3500C	4/8	6MB	3.7 GHz	15W
AMD Ryzen™ 3 3250C	2/4	5MB	3.5 GHz	15W

AMD ATHLON

MID-LEVEL CHROMEBOOKS
Responsive, reliable performance

MODEL	CPU CORES/ THREADS	TOTAL CACHE	MAX BOOST (UP TO)[4]	TDP
AMD Athlon™ Gold 3150C	2/4	5MB	3.3 GHz	15W
AMD Athlon™ Silver 3050C	2/2	5MB	3.2 GHz	15W

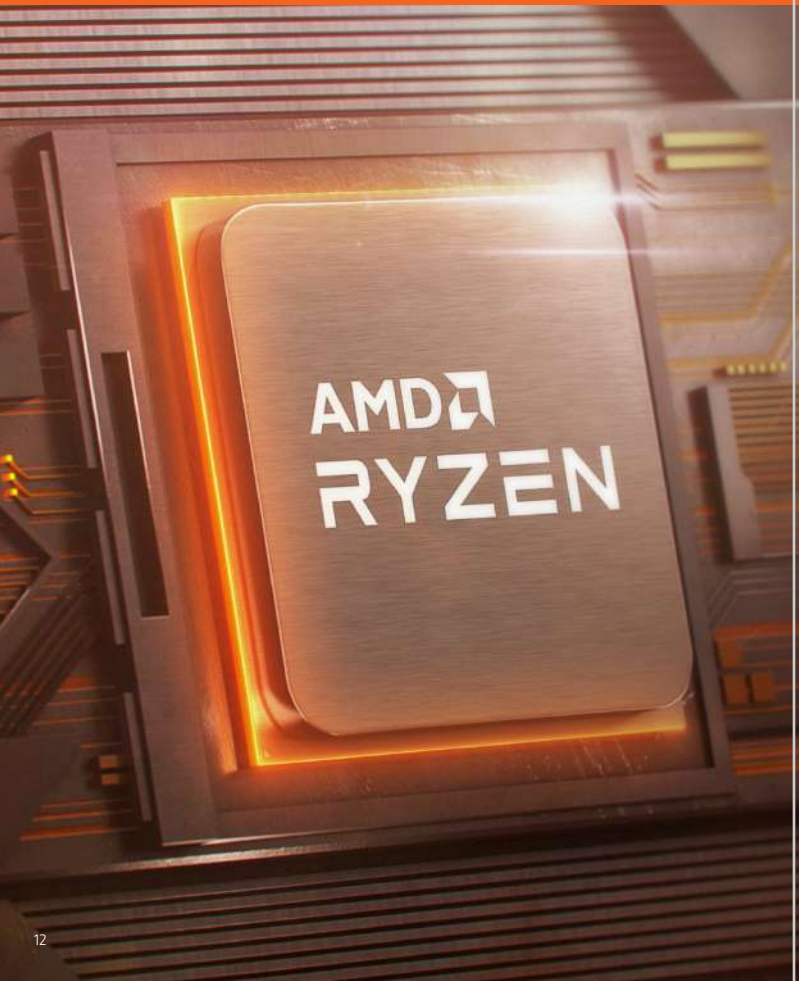
EVERYDAY CHROMEBOOKS
Everday use in fanless Chromebooks

MODEL	CPU CORES/ THREADS	TOTAL CACHE	MAX BOOST (UP TO)[4]	TDP
AMD 3015Ce	2/4	5MB	2.3 GHz	6W

See 1. RC-12, 2. RC-11, 3. RC-10, 4. GD-150

AMD RYZEN™ DESKTOP PROCESSORS

DESKTOPS



THE FASTEST IN THE GAME

AMD Ryzen™ 5000 Series desktop processors have raised the bar to what every customer should demand for their PC experience, the ultimate high-performance processor for gaming and content creation.

- **The Fastest Gaming[1] –** Delivering the thing every gamer needs: ***ultimate performance.***
- **The Newest Technologies –** A new processor is a big decision – ensure your customers have all the best features to stay in the game with the full suite of AMD Ryzen™ technologies.
- **Next Level Creator Performance –** AMD Ryzen™ 5000 Series processors set the bar for performance-seeking creators, artists, engineers, and designers alike.
- **Build with Confidence –** Available in both pre-built desktops and component parts for DIY builds, these processors are easy to configure and easy to customize.

AMD RYZEN 5000 SERIES

See endnote 1. R5K-002

AMD DESKTOP PROCESSORS

AMD desktop processors are available in several model types, and with or without graphics, bringing performance and choice across the spectrum from everyday gamers to DIY enthusiasts.

PRODUCT FAMILIES

AMD RYZEN™ THREADRIPPER™ PRO PROCESSORS

Up to 64 cores and 128 threads for tackling intense creative work

AMD RYZEN™ PROCESSORS

Powerful processors for enthusiast gamers & passionate creators

AMD RYZEN™ G-SERIES PROCESSORS WITH RADEON™ GRAPHICS

Come with powerful integrated graphics for superb gaming performance without the need for discrete graphics

AMD ATHLON™ PROCESSORS WITH RADEON™ GRAPHICS

Modern mainstream performance for productivity & multi-tasking

MODEL NUMBER SUFFIXES

NEW!

"X3D"

AMD 3D V-Cache™ technology vertically stacks L3 cache to unleash even more gaming performance

"X"

Extended frequency range for higher max boost[1]

"G"

Includes built-in AMD Radeon™ graphics and does not need an added discrete card

See 1. GD-150

FEATURES YOUR CUSTOMERS WILL ENJOY:

PRECISION BOOST 2

Precision Boost 2 automatically raises processor frequencies for supercharged performance when needed.[1]

PRECISION BOOST OVERDRIVE

Makes automatic overclocking possible with increased clockspeed and power limits at the touch of a button.[2]

MEMORY OVERCLOCKING

Get the most performance out of your AMD Ryzen™ PC with easily and seamlessly overclocking your system memory.[3]

LARGE CACHES

AMD Ryzen™ desktop processors feature large cache sizes for intense gaming and large data sets.

AMD STOREMI TECHNOLOGY

The fast and easy way to expand and accelerate the storage in a desktop by combining the speed of an SSD with the capacity of an HDD.

AMD RYZEN™ MASTER

The AMD Ryzen™ Master interface lets gamers personalize the performance of their unlocked AMD Ryzen™ Desktop Processor to their preferences, such as automatic overclocking[3] or monitoring system parameters like temperature.

See 1. GD-188, 2. GD-176, 3. GD-106

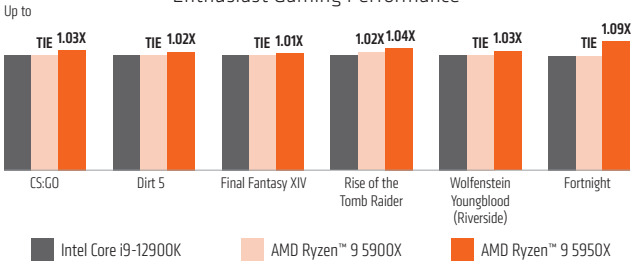
PERFORMANCE: AMD RYZEN™ DESKTOP PROCESSORS

SETTING THE BAR FOR HIGH PERFORMANCE

All AMD Ryzen™ 5000 Series processors are built on the industry-leading "Zen 3" technology that brings the best of both high-performance and efficiency.

AMD RYZEN™ 9 5000 SERIES

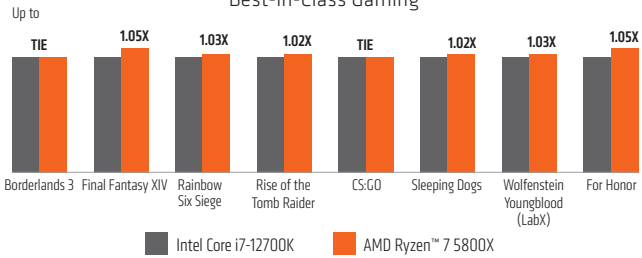
Enthusiast Gaming Performance



See endnotes R5K-113

AMD RYZEN™ 7 5800X

Best-in-Class Gaming

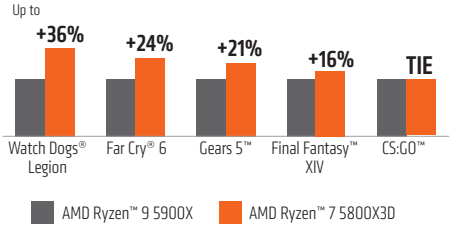


See endnotes R5K-118

AMD RYZEN™ 7 5800X3D
WITH AMD 3D V-CACHE™ TECHNOLOGY

World's Fastest Gaming Desktop Processor[1]

Average 15% faster gaming with 3D-stacked L3 cache[2]



See endnote 1. R5K-107, 2. R5K-106

AMD RYZEN™ 5000 G-SERIES PROCESSORS WITH RADEON™ GRAPHICS

GAMING
World's Fastest On-Chip Graphics[1] for incredibly immersive gaming

CONTENT CREATION
Bring Creative Projects to Life with up to **63% faster**[2] video editing than the competition*

PRODUCTIVITY
Crush Deadlines Fast with up to **28% faster**[2] productivity versus the competition*

*AMD Ryzen™ 7 5700G vs. Core i7-11700. See endnote 1. R5K-070, 2. R5K-079.

AMD RYZEN™ 5000 SERIES DESKTOP PROCESSORS

PROCESSOR	CPU CORES/THREADS	BOOST CLOCK (UP TO) / BASE, GHz*	TOTAL CACHE (L2+L3)	PCIe® SUPPORT	TDP	ARCHITECTURE
AMD Ryzen™ 9 5950X	16/32	4.9/3.4	72MB	Gen 4	105W	7nm *"Zen 3"*
AMD Ryzen™ 9 5900X	12/24	4.8/3.7	70MB	Gen 4	105W	7nm *"Zen 3"*
AMD Ryzen™ 9 5900 (OEM Only)	12/24	4.7/3.0	70MB	Gen 4	65W	7nm *"Zen 3"*
AMD Ryzen™ 7 5800X3D	8/16	4.5/3.4	100MB	Gen 4	105W	7nm *"Zen 3"*
AMD Ryzen™ 7 5800X	8/16	4.7/3.8	36MB	Gen 4	105W	7nm *"Zen 3"*
AMD Ryzen™ 7 5800 (OEM Only)	8/16	4.6/3.4	36MB	Gen 4	65W	7nm *"Zen 3"*
AMD Ryzen™ 7 5700X	8/16	4.6/3.4	36MB	Gen 4	65W	7nm *"Zen 3"*
AMD Ryzen™ 7 5700G with Radeon™ Graphics	8/16	4.6/3.8	20MB	Gen 3	65W	7nm *"Zen 3"*
AMD Ryzen™ 5 5600X	6/12	4.6/3.7	35MB	Gen 4	65W	7nm *"Zen 3"*
AMD Ryzen™ 5 5600	6/12	4.4/3.5	35MB	Gen 4	65W	7nm *"Zen 3"*
AMD Ryzen™ 5 5600G with Radeon™ Graphics	6/12	4.4/3.9	19MB	Gen 3	65W	7nm *"Zen 3"*
AMD Ryzen™ 5 5500	6/12	4.2/3.6	19MB	Gen 3	65W	7nm *"Zen 3"*
AMD Ryzen™ 3 5300G with Radeon™ Graphics (OEM Only)	4/8	4.2/4.0	10MB	Gen 3	65W	7nm *"Zen 3"*

*See GD-150

This chart illustrates competitive product positioning, is not necessarily an indication of relative performance and may not be to scale for any performance metric.

AMD RYZEN™ 3000 AND 4000 DESKTOP PROCESSORS

DESKTOPS

PROCESSOR	CPU CORES/THREADS	BOOST CLOCK (UPTO) / BASE, GHz*	TOTAL CACHE (L2+L3)	PCIe® SUPPORT	TDP	ARCHITECTURE
AMD Ryzen™ 4000 Series Processors						
AMD Ryzen™ 7 4700G with Radeon™ Graphics (OEM Only)	8/16	4.4/3.6	12MB	Gen 3	65W	7nm *"Zen 2"*
AMD Ryzen™ 5 4600G with Radeon™ Graphics	6/12	4.2/3.7	11MB	Gen 3	65W	7nm *"Zen 2"*
AMD Ryzen™ 5 4500	6/12	4.1/3.6	11MB	Gen 3	65W	7nm *"Zen 2"*
AMD Ryzen™ 3 4300G with Radeon™ Graphics (OEM Only)	4/8	4.0/3.8	6MB	Gen 3	65W	7nm *"Zen 2"*
AMD Ryzen™ 3 4100	4/8	4.0/3.8	6MB	Gen 3	65W	7nm *"Zen 2"*
AMD Ryzen™ 3000 Series Processors						
AMD Ryzen™ 9 3950X	16/32	4.7/3.5	72MB	Gen 4	105W	7nm *"Zen 2"*
AMD Ryzen™ 9 3900X	12/24	4.6/3.8	70MB	Gen 4	105W	7nm *"Zen 2"*
AMD Ryzen™ 7 3800X	8/16	4.5/3.9	36MB	Gen 4	105W	7nm *"Zen 2"*
AMD Ryzen™ 7 3700X	8/16	4.4/3.6	36MB	Gen 4	65W	7nm *"Zen 2"*
AMD Ryzen™ 5 3600X	6/12	4.4/3.8	35MB	Gen 4	95W	7nm *"Zen 2"*
AMD Ryzen™ 5 3600	6/12	4.2/3.6	35MB	Gen 4	65W	7nm *"Zen 2"*
AMD Ryzen™ 5 3400G with Radeon™ RX Vega 11 Graphics	4/8	4.2/3.7	6MB	Gen 3	65W	12nm *"Zen +"*
AMD Ryzen™ 3 3200G with Radeon™ Vega 8 Graphics	4/4	4.0/3.6	6MB	Gen 3	65W	12nm *"Zen +"*

This chart illustrates competitive product positioning, is not necessarily an indication of relative performance and may not be to scale for any performance metric.

GRAPHICS PERFORMANCE TO RULE YOUR GAME.

AMD Radeon™ Graphics are at the heart of gaming PCs, cloud gaming and today's top gaming consoles, delivering more speed, solutions, and technologies than ever to elevate thrilling new game worlds.

- **Laptops and Desktops:** Experience the ultimate PC gaming with the best of AMD processors, graphics cards, and software.
- **Consoles:** AMD powers next gen consoles such as PlayStation® 5 and Xbox® Series S and X.

AMD RADEON™ RX 6000 SERIES GRAPHICS

The latest series of AMD Radeon™ Graphics cards feature breakthrough AMD RDNA™ 2 architecture, engineered to offer new levels of performance, efficiency, and immersive visuals for mobile and desktop gaming.

AMD RADEON™ RX 6000 SERIES

POWERHOUSE PERFORMANCE FOR DESKTOPS

Powerful new compute units, the all-new AMD Infinity Cache™ technology, and large amounts of GDDR6 memory deliver ultra-high frame rates and the ultimate gaming experience.

AMD RADEON™ RX 6000M SERIES

ENGINEERED FOR ENTHUSIAST MOBILE GAMING

Delivering the best in ground-breaking AMD RDNA™ 2 architecture to the laptop space, bringing ultra-high frame rate gaming experiences and advanced content creation features anywhere.

AMD RADEON™ RX 6000S SERIES

NEXT-LEVEL THIN & LIGHT LAPTOP GAMING

Optimized for power requirements of thin and light laptops to bring high refresh gaming to amazingly compact form-factors.

AMD RADEON

NEXT-LEVEL MOBILE GAMING WITH AMD ADVANTAGE™ LAPTOPS

AMD Advantage laptops are engineered for high-performance:

- **Powered by AMD** Ryzen™ Processors, AMD Radeon™ Graphics, and AMD Radeon™ Software
- Designed for **100+ FPS** gaming
- Premium AMD FreeSync™ displays with **144Hz+** refresh rates
- **Optimized thermals** and premium components
- Designed for up to **10+ hours** battery on video playback

AMD Smart Technologies unlock even more performance:

- **AMD Smartshift Max** dynamically shifts power between the CPU and GPU to boost performance based on workload.
- **AMD Smart Shift Eco** optimizes battery performance no matter how you play.
- **AMD Smart Access Graphics** allows the GPU to control the display directly, boosting everyday efficiency and gaming performance.
- **AMD Smart Access Memory™ Technology** enhances performance in select titles through data transfer between AMD processors and graphics.[1]

See 1. GD-178

ELEVATING GAME PERFORMANCE

AMD SOFTWARE: ADRENALIN EDITION

AMD RADEON™ IMAGE SHARPENING[1]

Utilizes a contrast adaptive sharpening algorithm to restore clarity to in-game or productivity visuals.

AMD RADEON™ BOOST[3]

Delivers extra performance in select titles and improves game smoothness when fast on-screen character motion is detected.

AMD RADEON™ ANTI-LAG[2]

Reduces input latency for ultra-fast response times.

AMD RADEON™ CHILL

Dynamically regulates framerates based on in-game movements.

AMD RADEON™ SUPER RESOLUTION (RSR)[7]

AMD RSR is powered by the same technology as FSR to boost gameplay, and is ideal for any game where FSR may not be present.

MAXIMUM FIDELITY

AMD FIDELITYFX™

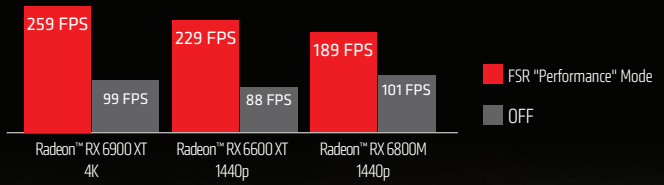
AMD FidelityFX™ technology[4] is AMD's open-source toolkit for game developers that helps deliver ultimate visual quality to power incredible gaming experiences.

AMD FIDELITYFX™ SUPER RESOLUTION (FSR)[5]

AMD FSR uses cutting-edge upscaling technologies to help boost framerates in compatible game titles.

The Riftbreaker "Ultra" Preset, Raytracing ON[8,9,10]

Up To



See 1. GD-156 2. GD-157 3. GD-158 4. GD-172 5. GD-187 6. RS-365 7. GD-197, 8. RS-366 [6900 XT] 9. RX-691 [6600 XT] 10. RS-369 [6800 M]

AMD RADEON™ GRAPHICS FOR DESKTOPS

ALL AMD RADEON™ RX 6000 SERIES MODELS FEATURE:

- Breakthrough AMD RDNA™ 2 Architecture
- AMD Infinity Cache™ technology to boost memory bandwidth
- Support for up to 6 displays with DisplayPort™ MST hub, DisplayPort 1.4 with DSC HDMI™ 2.1 VRR
- PCIE® 4.0 Support
- DirectX® 12 Ultimate featuring Direct X Raytracing and Variable Rate Shading
- AMD Radeon™ Software compatibilty to unleash more gaming performance

RECOMMENDED USE CASES

● = BEST ◐ = BETTER ○ = GOOD

Product Model	Web Browsing & Email	Watching 4K Media	Video Editing	Esports Gaming
ULTRA ENTHUSIAST				
AMD RADEON™ RX 6900 XT	●	●	●	●
AMD RADEON™ RX 6800 XT	●	●	●	●
AMD RADEON™ RX 6800	●	●	●	●
ENTHUSIAST				
AMD RADEON™ RX 6700 XT	●	●	●	●
AMD RADEON™ RX 6600 XT	●	●	●	●
AMD RADEON™ RX 6600	●	●	●	●
PERFORMANCE				
AMD RADEON™ RX 6500 XT	●	◐	○	◐
AMD RADEON™ RX 6400	●	◐	○	◐

SPECIFICATIONS

AMD RADEON™ MODEL	MAX POWER (UP TO)	COMPUTE UNITS	GAME CLOCK	GDDR6 MEMORY	AMD INFINITY CACHE
AMD Radeon™ RX 6900 XT	300W	80	2015 MHz	16 GB	128 MB
AMD Radeon™ RX 6800 XT	300W	72	2015 MHz	16 GB	128 MB
AMD Radeon™ RX 6800	250W	60	1815 MHz	16 GB	128 MB
AMD Radeon™ RX 6700 XT	230W	40	2424 MHz	12 GB	96 MB
AMD Radeon™ RX 6600 XT	160W	32	2359 MHz	8 GB	32 MB
AMD Radeon™ RX 6600	132W	28	2044 MHz	8 GB	32 MB
AMD Radeon™ RX 6500 XT	107W	16	2610 MHz	4 GB	16 MB
AMD Radeon™ RX 6400*	53W	12	2039 MHz	4 GB	16 MB

AAA Gaming	VR Gaming	Live Game Streaming	1440p Gaming	Hardware Raytracing	4K Gaming
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	◐
●	●	●	●	◐	
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1. GD-151

AMD RADEON™ GRAPHICS FOR MOBILE

LAPTOP GRAPHICS

ALL AMD RADEON™ S and M SERIES MODELS FEATURE:

- AMD Radeon™ VR Ready Premium[1]
- AMD RDNA™ 2 Architecture
- PCIE® 4.0 Support
- AMD Infinity Cache™ to boost memory bandwidth

SPECIFICATIONS

AMD RADEON™ S-SERIES MODEL	MAX POWER (UP TO)	COMPUTE UNITS	GAME CLOCK	GDDR6 MEMORY	AMD INFINITY CACHE
AMD Radeon™ RX 6800S	100W	32	1975 MHz	8 GB	32 MB
AMD Radeon™ RX 6700S	80W	28	1890 MHz	8 GB	32 MB
AMD Radeon™ RX 6600S	80W	28	1881 MHz	4 GB	32 MB

RECOMMENDED USE CASES

● = BEST ◐ = BETTER ○ = GOOD

Product	Web Browsing & Email	Watching 4K Media	Video Editing	Esports Gaming
AMD RADEON™ RX 6850M XT	●	●	●	●
AMD RADEON™ RX 6800M	●	●	●	●
AMD RADEON™ RX 6700M	●	●	●	●
AMD RADEON™ RX 6650M XT	●	●	●	●
AMD RADEON™ RX 6650M	●	●	●	●
AMD RADEON™ RX 6600M	●	●	●	●
AMD RADEON™ RX 6500M	●	◐	◐	◐
AMD RADEON™ RX 6300M	●	○	○	○
AMD RADEON™ RX 6800S	●	●	●	●
AMD RADEON™ RX 6700S	●	●	●	●
AMD RADEON™ RX 6600S	●	●	●	●

SPECIFICATIONS

AMD RADEON™ M-SERIES MODEL	MAX POWER (UP TO)	COMPUTE UNITS	GAME CLOCK	GDDR6 MEMORY	AMD INFINITY CACHE
AMD Radeon™ RX 6850M XT	165W	40	2463 MHz	12 GB	96 MB
AMD Radeon™ RX 6800M	145W	40	2300 MHz	12 GB	96 MB
AMD Radeon™ RX 6700M	135W	36	2300 MHz	10 GB	80 MB
AMD Radeon™ RX 6650M XT	120W	32	2162 MHz	8 GB	32 MB
AMD Radeon™ RX 6650M	120W	28	2222 MHz	8 GB	32 MB
AMD Radeon™ RX 6600M	100W	28	2177 MHz	8 GB	32 MB
AMD Radeon™ RX 6500M	50W	16	2191 MHz	4 GB	16 MB
AMD Radeon™ RX 6300M	25W	12	1512 MHz	2 GB	8 MB

AAA Gaming	VR Gaming	Live Game Streaming	1440p Gaming	Hardware Raytracing	4K Gaming
●	●	●	●	◐	◐
●	●	●	●	◐	○
●	●	●	●	◐	
●	●	◐	◐	○	
●	●	◐	◐	○	
◐	◐	◐	○	○	
◐	○				
○	○				
●	●	●	◐	◐	
●	●	●	○	○	
●	●	◐	○	○	

1. GD-102

Footnotes

RMB-6 Based on testing by AMD as of 12/14/2021. Integrated graphics performance leadership represented by the 3DMark Time Spy performance score of the Ryzen(TM) 7 6800U (15W) vs. last generation Ryzen™ 7 5800U (15W) and Intel Core i7-1185G7 (28W) mobile processors. Performance may vary.

RMB-7 Based on testing by AMD as of 12/14/2021. The integrated graphics performance of Ryzen™ 6000 Series processors can get up to 45 FPS average in the majority of 11 tested PC game titles at 1080p resolution with low settings, a threshold no other integrated graphics processor has reached before, including Intel Iris Xe graphics, and Ryzen™ 5000 Series graphics.

RMB-13 Based on testing by AMD as of 12/14/2021. CPU performance evaluated with a geomean of 9 multi-threaded content creation and CPU tests. GPU performance evaluated with 3DMark® Time Spy. System configuration for Ryzen™ 7 5800U CPU/GPU performance: HP ProBook 635 Aero G8 configured with 2x8GB DDR4-3200 (22-22-22), Windows® 11 22000.282, Samsung 980 Pro 1TB SSD, 15W nominal processor TDP, GPU driver 27.20.21026, BIOS T83. System configuration for Ryzen™ 7 6800U CPU/GPU performance: AMD reference motherboard configured with 4x4GB LPDDR5-6400 (40-39-45-90), Windows® 11 22000.282, Samsung 980 Pro 1TB SSD, 28W nominal processor TDP, GPU driver 30.0, BIOS TRM00810. Performance may vary

RMB-15 Based on testing by AMD as of 12/14/2021. Battery life evaluated with hours of continuous 1080p local video playback using the h.264 video codec. 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. System configuration: AMD reference motherboard(s), Ryzen™ 7 5800U @ 15W and 2x8GB LPDDR4, Ryzen™ 7 6800U @ 28W and 2x8GB LPDDR5, 1080p eDP IPSR display with Varibright at 150 nits, Samsung 980 Pro 1TB SSD, WLAN enabled and disconnected, Windows 11 22000.282, BIOS 103BRC1 (5800U) and 090RG6INT (6800U). Video file: 1920x1080, 23.976 FPS, h.264.

RMB-24 As of January 2022, only AMD Ryzen™ 6000 Series processors include the Microsoft Pluton security processor, while AMD Ryzen™ 5000 Series processors and Intel's latest 11th and 12th Gen processors do not.

RMB-39 Based on testing by AMD as of 12/14/2021. Configuration for Ryzen™ 7 6800U (28W): AMD reference motherboard with 4x4GB LPDDR5-6400, 1TB SSD, integrated Radeon graphics, GPU driver 30.0, Windows 11, BIOS TRM00810. System configuration for GeForce MX 450: Dell Inspiron 13 5310 configured with Core i7-11370H, 2x8GB LPDDR4x-4267, GeForce MX 450 with Nvidia graphics driver 496.49, Windows 10 19042.Game performance evaluated at 1920x1080 resolution at low detail settings except for DOTA2, World of Warcraft, and Counter Strike: GO, which were tested at ultra settings. Games tested: Assassin's Creed Valhalla, Cyberpunk 2077, Metro Exodus, Borderlands 3, Deathloop, Shadow of the Tomb Raider, Back 4 Blood, DOTA2, World of Warcraft, CS:GO. Results may vary.

RMB-42 Based on testing by AMD as of 12/14/2021. Productivity performance represented by PassMark CPUmark, PCMark Extended and PCMark Apps. Web browsing performance represented by Speedometer, Kraken, Octane. 2D Image editing performance represented by Photoshop CC2020 Puget benchmark. 3D Rendering performance represented by Blender (CPU and GPU), and Maxon Cinema 4D. Media Encoding/Rendering represented by Adobe Premiere Pro (Puget), Handbrake, DaVinci Resolve (Puget – 4K basic grade), and Lame LP3. Viewport Performance represented by Spec ViewPerf 13. Configuration for Ryzen™ 7 6800U 15W and 28W TDP system: AMD reference motherboard with 4x4GB LPDDR5-6400, 1TB SSD, integrated Radeon™ graphics, GPU driver 30.0.14002.118, Windows 11 Pro, BIOS TRM00810. Configuration for Ryzen 7 5800U 15W (5850U) system: HP Probook 635 Aero G8, with 2x8GB DDR4-3200 memory, 1TB SSD, integrated Radeon™ graphics, GPU driver 27.20.14040.11001, Windows 11, BIOS M47.1C.44.A80-CWE. Configuration for Core i7-1185G7 (28W): Dell Latitude 5420 system with 2x16GB DDR4-3200 memory, 1TB SSD, integrated Intel Iris Xe Graphics, GPU driver 27.20.100.9749, Windows 11 Pro, BIOS 1.1.2. Results may vary.

RMB-43 Based on testing by AMD as of 12/14/2021. Productivity performance represented by PassMark CPUmark and PCMark Express. 3D Rendering performance represented by Blender (CPU and GPU), and Maxon Cinema 4D. Media Encoding/Rendering represented by Lame LP3. Workstation performance represented by Spec Workstation. Configuration for Ryzen™ 9 6900HX system (45W): AMD reference motherboard with 2x8GB DDR5-4800, 1TB SSD, integrated Radeon™ graphics, internal GPU driver 30.0.14001.7001, Windows 11, BIOS M1C4C1016351SC48BAW. Configuration for Ryzen 9 5980HX system (45W): ASUS Zephyrus Duo, with 2x16GB DDR4-3200 memory, 1TB SSD, GeForce RTX 3080 with GPU driver 496.49, Windows 11, BIOS GX551QS.300. Configuration for Core i9-11980HK (65W): Gigabyte Aero 17 system with 2x16GB DDR4-3200 memory, 1TB SSD, GeForce RTX 3080 with GPU driver 496.49, Windows 11 Pro, BIOS 27.20.100.9415. Results may vary

RMB-44 Based on testing by AMD as of 12/14/2021. Productivity performance represented by PassMark CPUmark, PCMark Express and Apps (Word and Excel), and file compression. Web browsing performance represented by Speedometer, Kraken, Octane, and WebXprt benchmarks. 3D Rendering performance represented by Blender (CPU and GPU), and Maxon Cinema 4D. Configuration for Ryzen™ 9 6980HS (35W) system: AMD reference motherboard with 2x8GB DDR5-4800, 1TB SSD, integrated Radeon graphics, GPU driver 30.0.14024.3, Windows 11 Pro, BIOS MTC4C1016351SC48BAY. Configuration for Core i7-11375H (35W) system: MSI Stealth 15M laptop with 2x16GB DDR4-3200, 1TB SSD, NVIDIA GeForce RTX 3060, integrated GPU driver 30.0.100.9864, Windows 11 Pro, BIOS M471A2K43EB1-CWE. Results may vary.

RC-10 Testing by AMD Performance Labs as of 09/01/2020 with Ryzen 7 3700C CPU vs. an Acer Chromebook reference system configured with a Ryzen 5 3500C processor, a Ryzen 3 3250C processor, and an Acer Chromebook Zada configured with an AMD A6-9220C processor utilizing the following benchmark: PCMark photo editing. Chromebook manufacturers may vary configurations yielding different results. Performance may vary. PCMark is a trademark of Futuremark Corporation.

RC-11 Testing by AMD Performance Labs as of 09/01/2020 with Ryzen 7 3700C CPU vs. an Acer Chromebook reference system configured with a Ryzen 5 3500C processor, a Ryzen 3 3250C processor, and an Acer Chromebook Zada configured with an AMD A6-9220C processor utilizing the following benchmark: PCMark Writing 2.0 Score. Chromebook manufacturers may vary configurations yielding different results. Performance may vary. PCMark is a trademark of Futuremark Corporation.

RC-12 Testing by AMD Performance Labs as of 09/01/2020 with Ryzen 7 3700C CPU vs. an Acer Chromebook reference system configured with a Ryzen 5 3500C processor, a Ryzen 3 3250C processor, and an Acer Chromebook Zada configured with an AMD A6-9220C processor utilizing the following benchmark: Kraken 1.1 TTC. Chromebook manufacturers may vary configurations yielding different results. Performance may vary.

RSK-002: Testing by AMD Performance labs as of 12/14/2021, based on the average FPS of 6 PC games at 1920x1080 with the high image quality preset using an AMD Ryzen™ 7 5800X3D processor vs. Core i9-12900K. For Ryzen 5000 G-Series processors testing as of 5/5/2021 based on the average FPS of 11 PC games at 1920x1080 with the low image quality preset using an AMD Ryzen™ 7 5700G vs Core i7-11700, both configured with integrated graphics. Results may vary.

RSK-070 Testing by AMD Performance Labs as of May 5, 2021 using a Ryzen 7 5700G, Ryzen 5 5600G and Ryzen 3 5300G vs Intel Core i7-11700, Core i5-11600 and Core i3-10300 in 3DMark Time Spy using integrated graphics. Results may vary with configuration.

RSK-079: Testing by AMD Performance Labs as of May 5, 2021 using a Ryzen 7 5700G with an AMD Reference motherboard, AMD Wraith Prism cooler, integrated graphics, 2x8GB DDR4-3200, 512GB SSD, and Windows 10 vs a similarly configured system with an Intel Core i7-11700. Results may vary.

RSK-083: Testing by AMD Performance Labs as of May 5, 2021 using a Ryzen 7 5700G vs Intel Core i7-11700 configured with integrated graphics in the following games at 1080p low settings: Ashes of the Singularity, Assassin's Creed Odyssey, Metro Exodus, Deus Ex: Mankind Divided, Far Cry New Dawn, Civilization VI, Shadow of the Tomb Raider, CSGO, League of Legends and Fortnite. Results may vary.

RSK-088: Testing by AMD Performance Labs as of May 28, 2021 using a Ryzen 7 5800X vs Intel Core i7-11700K configured with 16GB DDR4-3600 and a GeForce RTX 3080. All games tested at 1080p High settings. Results may vary.

RSK-095: Testing by AMD Performance Labs as of May 28, 2021 using a Ryzen 9 5900X and Intel Core i9-11900K each configured with 2x8GB DDR4-3600C16 and GeForce RTX 3080. Results may vary.

RSK-096: Testing by AMD Performance Labs as of May 28, 2021 using a Ryzen 7 5800X processor and Intel Core i7-11700K, each configured with 2x8GB DDR4-3600C16 and GeForce RTX 3080. Results may vary.

RS-365 Testing by AMD Performance Labs as of June 11, 2021, on the AMD Radeon™ 6900 XT, AMD Radeon™ 6800 XT, and AMD Radeon™ 6700 XT graphics cards with pre-release AMD Radeon™ Software 21.6.1 RC Prime 9 (21.20-210518a-367616E) driver with AMD Smart Access Memory enabled, on a test system comprising of an AMD Ryzen™ 9 5900X, 16GB DDR4-3200 RAM, ASRock X570 Taichi motherboard with BIOS version P3.61 at default settings, and Windows® 10 Pro May 2020 Update (19041.508). Benchmark tests: Anno 1800, DX12, 3840 x 2160, Ultra Hight preset, no raytracing. Evil Genius 2, Vulkan, 3840 x 2160, Ultra preset, no raytracing. Godfall, DX12, 3840 x 2160, Epic preset, Raytracing ON. Kingshunt, DX12, 3840 x 2160, Ultra preset, no raytracing. The Riftbreaker, DX12, 3840 x 2160, Ultra preset, Raytracing ON. Terminator: Resistance, DX11, 3840 x 2160, Epic preset, no raytracing. Game 7, DX12, 3840 x 2160, High preset, no raytracing. Performance may vary and is dependent on the FSR Quality Mode selected. FSR requires developer integration and is available in select games only.

RS-366 Testing conducted by AMD as of June 9th, 2021, on a test system comprised of a Ryzen 9 5900X CPU, 16GB DDR4, Radeon RX 6900 XT GPU with Radeon Software Adrenalin 21.6.1 beta on FSR enabled pre-release builds of Terminator Resistance, Godfall, and The Riftbreaker. All games tested at 4K with maximum quality presets. Performance may vary.

RX-691 Testing done by AMD performance labs July 15, 2021 with an AMD Ryzen 5 5600X CPU, 16GB DDR4-3600, ASRock Taichi, Win10 Pro x64 19041.508, Radeon RX 6600 XT GPU (Driver 21.6.1). AMD FidelityFX Super Resolution is "game dependent" and is supported provided the minimum requirements of the game are met. Performance may vary.

RS-369 Testing conducted by AMD as of June 9th, 2021, on a test system comprised of a Ryzen 9 5900X CPU, 16GB DDR4, Radeon RX 6800M with Radeon Software Adrenalin 21.6.1 beta on FSR enabled pre-release builds of Terminator Resistance, Godfall, and The Riftbreaker. External display connected to platform. All games tested at 1440p with maximum quality presets. Performance may vary.

GD-106 Overclocking and/or Undervolting AMD processors and memory, including without limitation, altering clock frequencies / multipliers or memory timing / voltage, to operate outside of AMD's published specifications will void any applicable AMD product warranty, even when 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 and/or undervolting AMD processors, including, without limitation, failure of or damage to hardware, reduced system performance and/or data loss, corruption, or vulnerability.

GD-156 Radeon™ Image Sharpening is compatible with DirectX 11, 12, & Vulkan APIs. DirectX 9 support with Radeon RX 5000 Series GPUs only. Compatible with Windows 10/11. Hardware compatibility includes Radeon GCN and newer consumer dGPUs, Ryzen 2000 Series processors and newer APUs, including hybrid and detachable graphics configurations. No mGPU support.

GD-157 Radeon™ Anti-Lag is compatible with DirectX 9, DirectX 11 and DirectX 12 APIs, Windows 7/ 10/11. Hardware compatibility includes Radeon GCN and newer consumer dGPUs, Ryzen 2000 Series and newer APUs, including hybrid and detachable graphics configurations. No mGPU support.

GD-158 Radeon™ Boost is compatible with Windows 7/ 10/11 in select titles only. Hardware compatibility includes Radeon RX 400 and and newer consumer dGPUs, Ryzen 2000 Series and newer APUs, including hybrid and detachable graphics configurations. No mGPU support. Radeon™ Boost VRS compatible with AMD Radeon™ RX 6000 Series Graphics only. For a list of compatible titles see https://www.amd.com/en/technologies/radeon-boost.

GD-159 Game streaming requires phone or tablet which supports Android 7.0 and greater or iOS 11 and greater. For TV support, Apple TV 4th and 5th generation running tvOS 12.x and greater, or Android TV 5.1 and greater are required. Streaming at 4K requires 4K capable streaming hardware and is compatible with: AMD Radeon™ GCN-based discrete graphics and newer. Supports Windows® 7/ 10/11. Game Streaming available anywhere there is a high-speed internet connection. For local profiles, all devices must be on the same local network. For internet streaming to work, your router must allow port forwarding and your PC must not be behind a network configuration that hinders connectivity. Controllers must be compatible with selected game and headset, please consult vendor for compatibility information.

GD-172 For additional information, see https://www.amd.com/en/technologies/radeon-software-fidelityfx.

GD-178 Smart Access Memory technology enablement requires an AMD Radeon 6000 series GPU, Ryzen 5000 or 3000 series CPU (excluding the Ryzen 5 3400G and Ryzen 3 3200G) and a 500 series motherboard with the latest BIOS update. BIOS requires support for AGESA 1.1.0.0 or higher. Download latest BIOS from vendor website. For additional information and system requirements, see https://www.amd.com/en/technologies/smart-access-memory.

GD-187 AMD FidelityFX Super Resolution is available on select games and requires developer integration. See https://www.amd.com/en/technologies/radeon-software-fidelityfx-super-resolution for a list of supported games. AMD FidelityFX Super Resolution is "game dependent" and is supported on the following AMD products: AMD Radeon™ RX 6000, RX 5000, RX 500, RX Vega series graphics cards, RX 480, RX 470, RX 460, and all AMD Ryzen™ Processors with Radeon™ Graphics if the minimum requirements of the game are met. AMD does not provide technical or warranty support for AMD FidelityFX Super Resolution enablement on other vendor's graphics cards. GD-187.

GD-179 Precision Boost Overdrive requires an AMD Ryzen Threadripper or a Ryzen 3000/4000/5000 series desktop processor, and a compatible motherboard. AMD Ryzen 3400G and 3200G series processors are not compatible. Because Precision Boost Overdrive enables operation of the processor outside of AMD's published specifications, use of the feature invalidates the AMD product warranty and may also void warranties offered by the system manufacturer or retailer. Availability of Precision Boost Overdrive in pre-built OEM desktop systems will vary based on the PC manufacturer's settings. Check with the PC manufacturer prior to purchase.

GD-188 For additional information about Precision Boost 2, see https://www.amd.com/en/support/kb/faq/cpu-pb2.

GD-197 As of January 2022, Radeon Super Resolution is compatible with Radeon RX 5000 series graphics and newer and works with games that support exclusive full-screen mode. AMD Software: Adrenalin Edition 22.1.3 or newer is required.

GD-203 Based on node size as of February 2022.