

AMD CONSUMER POCKET GUIDE

MAY 2023



AMD 
together we advance_

TOGETHER WE ADVANCE



AI

AMD is advancing the future of AI and transforming the modern world around us.



ENTERTAINMENT

From special effects to virtual production to 3D modeling, AMD technology is empowering film, TV, and game creators to realize their vision.



GAMING

AMD is the only processor used across PCs, handhelds, and gaming consoles like Xbox and Playstation.

Did you know that AMD powers technology all around you? From airplanes to electric cars, from your favorite game consoles to the cloud, companies rely on AMD to deliver dependable performance to advance the world around us.



AEROSPACE

AMD is advancing space exploration on Mars, with powerful AI that learns & adapts to new discoveries.



AUTOMOTIVE

AMD technology is powering next-generation automotive systems for automated driving, electrification, networking, and in-vehicle entertainment.



SUPERCOMPUTING

One of the world's most powerful supercomputers powered by AMD is helping solve the world's toughest challenges, from forecasting the future of climate change to early cancer detection and more.

AMD MOBILE PROCESSORS

AMD PROCESSORS FOR MOBILE

AMD delivers a robust mobile processor lineup, with powerful performance from top to bottom. Find AMD processors powering thin and light laptops for every computing need—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

ULTRATHIN PERFORMANCE

'U' Processors

'U' processors are designed for ultrathin notebooks, ideal for ultimate mobility and battery life (TDP: 15-30W)

SLIM ENTHUSIAST PERFORMANCE

'HS' Processors

'HS' processors are designed for portable, high-performance creator, gaming, and premium notebooks (TDP: 35-54W)

EXTREME PERFORMANCE

'HX' Processors

'HX' processors are designed for the ultimate performance in gaming and creator notebooks (TDP: 55W+)

AMD RYZEN™ 7000 SERIES PROCESSORS

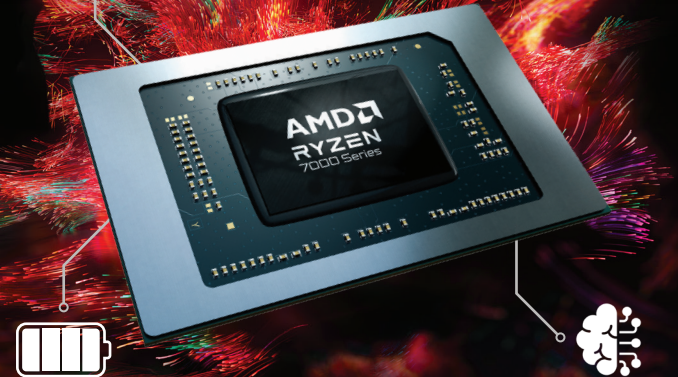


AMD Ryzen™ 7000 Series processors are the latest laptop processors from AMD, bringing the ultimate speed, leadership battery life, and all new AI experiences to the latest laptops.



PURE SPEED

Experience the ultimate performance to elevate your work, gaming, creativity, and entertainment experiences



FREEDOM TO UNPLUG

Go further with smart battery management technology designed to help deliver the longest possible time unplugged.

EXPERIENCE INNOVATION

Open a new world of collaboration and real-time video enhancements with AMD Ryzen™ AI

AMD RYZEN™ 7000 SERIES PROCESSORS



AMD Ryzen™ 7000 Series processors elevate the premium user experience, bringing speed, endurance, and new technologies.



THE ULTIMATE GAMING PROCESSORS

Seize the pure performance you need to win in this year's best gaming laptops



THE ULTIMATE ULTRATHIN PROCESSORS

Take on any task with exceptional speed in sleek, premium & portable laptops



FASTEST BUILT-IN GRAPHICS¹

Play games and stay entertained like never before with the fastest AMD Radeon™ 700M graphics in AMD Ryzen™ 7040 Series processors



NEW "ZEN 4" ARCHITECTURE

Performance & efficiency are at your fingertips with the latest processor technology from AMD



ENHANCED CONNECTIVITY

Stay connected with the latest Wi-Fi & USB4 compatibility, and innovative technologies that enhance video conferencing



AMD RYZEN™ AI

Be ready to usher in the future with the world's first integrated AI engine on an x86 processor²



WORLD'S FASTEST MOBILE GAMING PROCESSOR¹

AMD Ryzen™ 9 7945HX vs. Core i9-13950HX
On average **10% faster** gaming across 31 titles¹

AMD Ryzen™ 9 7945HX vs. Core i9-13980HX
Up to **15% faster** performance with **54% better** efficiency²



ULTIMATE ULTRATHIN PROCESSOR

AMD Ryzen™ 7 7840U vs. Core i7-1360P
Up to **29% faster** content creation³
Up to **39% faster** productivity⁴
Up to **66% faster** graphics⁵



HIGH PERFORMANCE FOR THE MAINSTREAM

AMD Ryzen™ 5 7530U vs. Core i5-1245U⁶
Up to **19% faster** web browsing
Up to **38% faster** productivity

1. PHX-9, 2. PHX-3. Ryzen AI available in select AMD Ryzen 7040 Series models only.

1. DRG-10, 2. DRG-12, 3. PHX-27, 4. PHX-26, 5. PHX-28, 6. BCLR-8

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 processor 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.

2023 AMD ATHLON™ & RYZEN™ PROCESSOR MODELS



PROCESSOR	ARCHITECTURE	CPU CORES/ THREADS	TOTAL CACHE	MAX BOOST (UP TO)	TDP	INTEL COMPARES
AMD Ryzen™ 7000 Series Processors						
AMD Ryzen™ 9 7945HX Processor	5nm Zen 4	16/32	80MB	5.4 GHz	55W+	Intel® Core™ i9
AMD Ryzen™ 9 7845HX Processor	5nm Zen 4	12/24	76MB	5.2 GHz	55W+	Intel® Core™ i9
AMD Ryzen™ 7 7745HX Processor	5nm Zen 4	8/16	40MB	5.1 GHz	55W+	Intel® Core™ i7
AMD Ryzen™ 5 7645HX Processor	5nm Zen 4	6/12	38MB	5.0 GHz	55W+	Intel® Core™ i5
AMD Ryzen™ 9 7940HS Processor	4nm Zen 4	8/16	24MB	5.2 GHz	35-54W	Intel® Core™ i9
AMD Ryzen™ 7 7840HS Processor	4nm Zen 4	8/16	24MB	5.1 GHz	35-54W	Intel® Core™ i7
AMD Ryzen™ 5 7640HS Processor	4nm Zen 4	6/12	22MB	5.0 GHz	35-54W	Intel® Core™ i5
AMD Ryzen™ 7 7840U Processor	4nm Zen 4	8/16	24MB	5.1 GHz	15-30W	Intel® Core™ i7
AMD Ryzen™ 5 7640U Processor	4nm Zen 4	6/12	22MB	4.9 GHz	15-30W	Intel® Core™ i5
AMD Ryzen™ 5 7540U Processor	4nm Zen 4	6/12	22MB	4.9 GHz	15-30W	Intel® Core™ i5
AMD Ryzen™ 3 7440U Processor	4nm Zen 4	4/8	12MB	4.7 GHz	15-30W	Intel® Core™ i3
AMD Ryzen™ 7 7735HS Processor	6nm Zen 3+	8/16	20MB	4.75 GHz	35W	Intel® Core™ i7
AMD Ryzen™ 5 7535HS Processor	6nm Zen 3+	6/12	19MB	4.55 GHz	35W	Intel® Core™ i5
AMD Ryzen™ 7 7735U Processor	6nm Zen 3+	8/16	20MB	4.75 GHz	15-28W	Intel® Core™ i7
AMD Ryzen™ 5 7535U Processor	6nm Zen 3+	6/12	19MB	4.55 GHz	15-28W	Intel® Core™ i5
AMD Ryzen™ 3 7335U Processor	6nm Zen 3+	4/8	10MB	4.3 GHz	15-28W	Intel® Core™ i3
AMD Ryzen™ 7 7730U Processor	7nm Zen 3	8/16	20MB	4.5 GHz	15W	Intel® Core™ i7
AMD Ryzen™ 5 7530U Processor	7nm Zen 3	6/12	19MB	4.5 GHz	15W	Intel® Core™ i5
AMD Ryzen™ 3 7330U Processor	7nm Zen 3	4/8	10MB	4.3 GHz	15W	Intel® Core™ i3
AMD Ryzen™ 5 7520U Processor	6nm Zen 2	4/8	6MB	4.3 GHz	15W	Intel® Core™ i5
AMD Ryzen™ 3 7320U Processor	6nm Zen 2	4/8	6MB	4.1 GHz	15W	Intel® Core™ i3
AMD Athlon™ Gold 7220U Processor	6nm Zen 2	2/4	5MB	3.7 GHz	8 - 15W	Intel® Pentium® Gold
AMD Athlon™ Silver 7120U Processor	6nm Zen 2	2/2	3MB	3.5 GHz	8 - 15W	Intel® Pentium® Silver

2022 AMD RYZEN™ PROCESSOR MODELS

PROCESSOR	ARCHITECTURE	CPU CORES/ THREADS	TOTAL CACHE	MAX BOOST (UP TO) ¹	TDP	INTEL COMPARES
AMD Ryzen™ 6000 Series Processors						
AMD Ryzen™ 9 6980HX Processor	6nm "Zen 3+"	8/16	20MB	5.0 GHz	45W+	Intel® Core™ i9
AMD Ryzen™ 9 6980HS Processor	6nm "Zen 3+"	8/16	20MB	5.0 GHz	35W	Intel® Core™ i9
AMD Ryzen™ 9 6900HX Processor	6nm "Zen 3+"	8/16	20MB	4.9 GHz	45W+	Intel® Core™ i9
AMD Ryzen™ 9 6900HS Processor	6nm "Zen 3+"	8/16	20MB	4.9 GHz	35W	Intel® Core™ i9
AMD Ryzen™ 7 6800H Processor	6nm "Zen 3+"	8/16	20MB	4.7 GHz	45W	Intel® Core™ i7
AMD Ryzen™ 7 6800HS Processor	6nm "Zen 3+"	8/16	20MB	4.7 GHz	35W	Intel® Core™ i7
AMD Ryzen™ 5 6600H Processor	6nm "Zen 3+"	6/12	19MB	4.5 GHz	45W	Intel® Core™ i5
AMD Ryzen™ 5 6600HS Processor	6nm "Zen 3+"	6/12	19MB	4.5 GHz	35W	Intel® Core™ i5
AMD Ryzen™ 7 6800U Processor	6nm "Zen 3+"	8/16	20MB	4.7 GHz	15-28W	Intel® Core™ i7
AMD Ryzen™ 5 6600U Processor	6nm "Zen 3+"	6/12	19MB	4.5 GHz	15-28W	Intel® Core™ i5
AMD Ryzen™ 5000 Series Processors						
AMD Ryzen™ 7 5825U Processor	7nm "Zen 3"	8/16	20MB	4.5 GHz	15W	Intel® Core™ i7
AMD Ryzen™ 5 5625U Processor	7nm "Zen 3"	6/12	19MB	4.3 GHz	15W	Intel® Core™ i5

2021 AMD RYZEN™ PROCESSOR MODELS

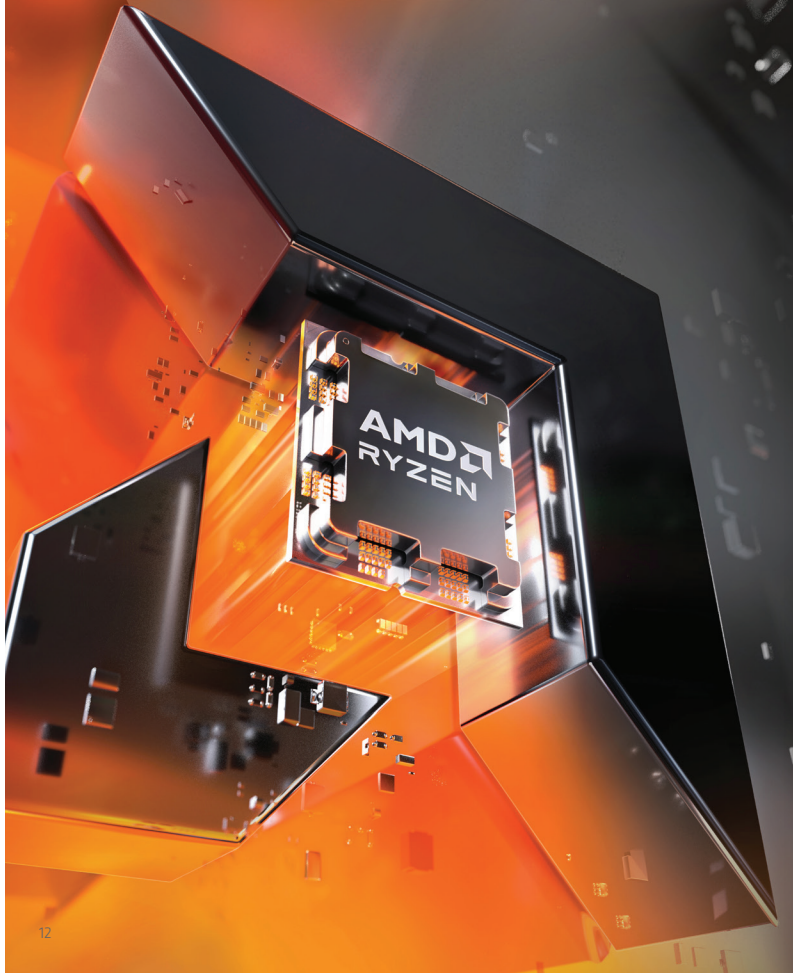


PROCESSOR	ARCHITECTURE	CPU CORES/ THREADS	TOTAL CACHE	MAX BOOST (UP TO) ¹	TDP	INTEL COMPARES
AMD Ryzen™ 9 5980HX Processor	7nm "Zen 3"	8/16	20MB	4.8 GHz	45W+	Intel® Core™ i9
AMD Ryzen™ 9 5980HS Processor	7nm "Zen 3"	8/16	20MB	4.8 GHz	35W	Intel® Core™ i9
AMD Ryzen™ 9 5900HX Processor	7nm "Zen 3"	8/16	20MB	4.6 GHz	45W+	Intel® Core™ i9
AMD Ryzen™ 9 5900HS Processor	7nm "Zen 3"	8/16	20MB	4.6 GHz	35W	Intel® Core™ i9
AMD Ryzen™ 7 5800H Processor	7nm "Zen 3"	8/16	20MB	4.4 GHz	45W	Intel® Core™ i7
AMD Ryzen™ 7 5800HS Processor	7nm "Zen 3"	8/16	20MB	4.4 GHz	35W	Intel® Core™ i7
AMD Ryzen™ 5 5600H Processor	7nm "Zen 3"	6/12	19MB	4.2 GHz	45W	Intel® Core™ i5
AMD Ryzen™ 5 5600HS Processor	7nm "Zen 3"	6/12	19MB	4.2 GHz	35W	Intel® Core™ i5
AMD Ryzen™ 7 5800U Processor	7nm "Zen 3"	8/16	20MB	4.4 GHz	15W	Intel® Core™ i7
AMD Ryzen™ 7 5700U Processor	7nm "Zen 2"	8/16	12MB	4.3 GHz	15W	Intel® Core™ i7
AMD Ryzen™ 5 5600U Processor	7nm "Zen 3"	6/12	19MB	4.2 GHz	15W	Intel® Core™ i5
AMD Ryzen™ 5 5500U Processor	7nm "Zen 2"	6/12	11MB	4.0 GHz	15W	Intel® Core™ i5
AMD Ryzen™ 3 5400U Processor	7nm "Zen 3"	4/8	10MB	4.0 GHz	15W	Intel® Core™ i3
AMD Ryzen™ 3 5300U Processor	7nm "Zen 2"	4/8	6MB	3.8 GHz	15W	Intel® Core™ i3

AMD RYZEN™ DESKTOP PROCESSORS



DESKTOPS



AMD desktop processors are available in several varieties, bringing performance and choice across the spectrum from everyday gamers to enthusiasts. Available in both pre-built desktops and as component parts for DIY builds, these processors are easy to configure and customize.

PRODUCT FAMILIES

AMD RYZEN™ PROCESSORS

Powerful processors for enthusiast gamers & passionate creators

AMD RYZEN™ G-SERIES PROCESSORS WITH RADEON™ GRAPHICS

Come with integrated graphics for smooth gaming without the need for discrete graphics

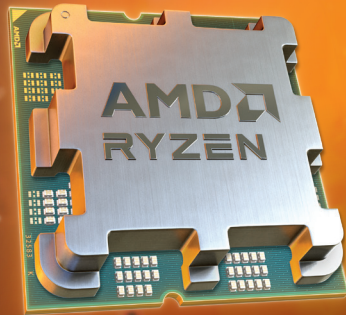
AMD ATHLON™ PROCESSORS WITH RADEON™ GRAPHICS

Modern mainstream performance for productivity & multi-tasking

MODEL NUMBER SUFFIXES

"X3D"	"X"	"NO SUFFIX"	"G"
(ex Ryzen 9 7950X3D)	(ex Ryzen 9 7900X)	(ex Ryzen 9 7900)	(ex Ryzen 7 5700G)
AMD 3D V-Cache™ technology vertically stacks L3 cache to unleash even more gaming performance	High-performance processors for powerful gaming and content creation	Lower power 65W models bring more efficient gaming performance.	Includes built-in AMD Radeon™ graphics

AMD RYZEN™ DESKTOP PROCESSORS



KING OF GAMING

Revolutionary AMD Ryzen™ 7000X3D Series processors with AMD 3D V-Cache™ technology are the fastest gaming processors in the world¹

THE ULTIMATE PROCESSORS FOR GAMING & CREATING

AMD combines its top-end processors with up to 144MB of on-chip memory. This means that enthusiasts can harness the power of the ultimate gaming and creator performance in one chip. No workload is off limits.

TECHNOLOGY THAT SAVES YOU TIME

Enjoy time-saving connectivity like PCIe® 5.0 storage support, ultra-fast WiFi® 6E, AMD EXPO™ technology, up to 32 processing threads, and dedicated video accelerators².

1. RPL-39, 2. GD-176



DESKTOPS

UPGRADABLE FOR YEARS TO COME

AMD Ryzen™ 7000 Series processors are packed with state-of-the-art technologies to keep you on the bleeding edge now, and in the future. Built alongside the future-looking Socket AM5 platform, only AMD has committed upgrade support for years to come.

AMD RYZEN™ 7000 SERIES & AM5 A 5-STAR PLATFORM

- ★ 5nm technology
- ★ UP TO 5GHz+ BOOST¹
- ★ AM5
- ★ PCIe® 5.0
- ★ DDR5

AMD RYZEN™ 9 7950X3D THE FASTEST GAMING PROCESSORS IN THE WORLD²

1920X1080 RESOLUTION

vs. Intel Core i9-13900K, High Image Quality Preset, Up To



1. GD-150, 2. RPL-39

AMD RYZEN™ DESKTOP PROCESSORS



AMD RYZEN™ 7000 SERIES EFFICIENT 65W MODELS

AMD Ryzen™ 65W processors bring the performance gamers and creators need, and the efficiency they want.



MORE AFFORDABLE PRICE POINTS



MORE VALUE WITH COOLER INCLUDED

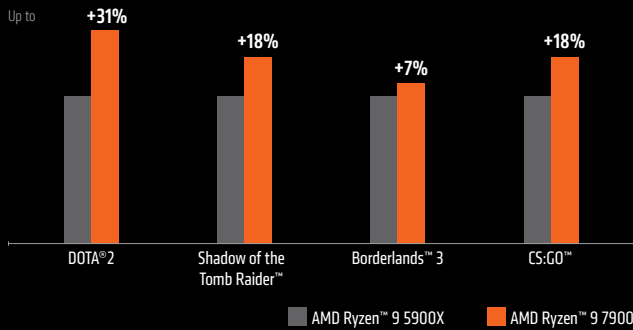


OVERCLOCKING¹ SUPPORT FOR MORE PERFORMANCE



POWER EFFICIENT PERFORMANCE

GAMING PERFORMANCE - GENERATIONAL²



AMD ADVANTAGE™ GAMING DESKTOPS

The AMD Advantage™ platform fuses together the best AMD Ryzen™ processors, AMD Radeon™ graphics, and AMD Software and AMD Smart Technologies for a seamless high-performance desktop experience.



AMPLIFIED PERFORMANCE

- Reach peak performance with AMD Ryzen™ 7000 Series processors and Radeon™ RX 7900 XTX graphics
- AMD Smart Technologies designed to enhance system performance and efficiency



ADVANCED VISUALS

- Brilliant gaming on industry defining display engine
- AMD FreeSync™ Premium technology enabled displays
- Connect the most advanced displays supporting up to 4K480, 8K165, or UW8K240



BUILT TO GAME

- Premium build materials and optimized fan and thermal management
- State of the art software with AMD Software: Adrenaline Edition™ application - Radeon™ Boost, Radeon™ Super Resolution, Radeon™ Anti-Lag, and AMD Noise Suppression

1. GD-106, 2. RPL-20

AMD RYZEN™ 7000 SERIES DESKTOP PROCESSORS

PROCESSOR	CPU CORES/THREADS	BOOST CLOCK (UP TO) / BASE, GHz	TOTAL CACHE (L2+L3)	PCIe® SUPPORT	TDP	ARCHITECTURE
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AMD Ryzen™ 7000 Series Processors

AMD Ryzen™ 9 7950X3D	16/32	5.7/4.2	144MB	Gen 5	120W	5nm "Zen 4"
AMD Ryzen™ 9 7950X	16/32	5.7/4.5	80MB	Gen 5	170W	5nm "Zen 4"
AMD Ryzen™ 9 7900X3D	12/24	5.6/4.4	140MB	Gen 5	120W	5nm "Zen 4"
AMD RYZEN™ 9 7900X	12/24	5.6/4.7	76MB	Gen 5	170W	5nm "Zen 4"
AMD RYZEN™ 9 7900	12/24	5.4/3.7	76MB	Gen 5	65W	5nm "Zen 4"
AMD Ryzen™ 7 7800X3D	8/16	5.0/4.2	104MB	Gen 5	120W	5nm "Zen 4"
AMD RYZEN™ 7 7700X	8/16	5.4/4.5	40MB	Gen 5	105W	5nm "Zen 4"
AMD RYZEN™ 7 7700	8/16	5.3/ 3.8	40MB	Gen 5	65W	5nm "Zen 4"
AMD RYZEN™ 5 7600X	6/12	5.3 / 4.7	38MB	Gen 5	105W	5nm "Zen 4"
AMD RYZEN™ 5 7600	6/12	5.1 / 3.8	38MB	Gen 5	65W	5nm "Zen 4"

AMD RYZEN™ 5000 SERIES DESKTOP PROCESSORS



DESKTOPS

PROCESSOR	CPU CORES/THREADS	BOOST CLOCK (UP TO) / BASE, GHz	TOTAL CACHE (L2+L3)	PCIe® SUPPORT	TDP	ARCHITECTURE
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AMD Ryzen™ 5000 Series Processors

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"

AMD RADEON™ GRAPHICS

NEXT-GEN GRAPHICS PERFORMANCE FOR GAMERS AND CREATORS

Based on the advanced AMD RDNA™ 3 architecture, the AMD Radeon™ RX 7000 Series Graphics deliver next-gen performance, visuals, and efficiency.



AMD RADEON™ RX 7000 SERIES

BREAKTHROUGH PERFORMANCE FOR DESKTOPS

Breakthrough new levels of performance with blazing fast clock speeds for an immersive gaming experience at all gaming resolutions. AMD Radeon™ RX 7000 Series graphics are built to deliver incredible performance while maximizing graphical fidelity.



AMD RADEON™ RX 7000M SERIES

ENTHUSIAST MOBILE GAMING

The AMD Radeon™ RX 7000M Series GPUs enable mobile platforms with extreme performance per watt characteristics while delivering state-of-the-art visuals and high FPS gaming.



AMD RADEON™ RX 7000S SERIES

NEXT-LEVEL THIN & LIGHT MOBILE GAMING

Built to deliver excellent gaming experiences to your slim laptop, the AMD Radeon™ RX 7000S Series graphics cards maximize the efficiency potential of the advanced architecture, enabling outstanding performance at low power levels ideally suited for thin and light designs.



AMD RADEON™ RX 7900 XTX @ 4K MAX SETTINGS¹ [UP TO]

119 FPS

Call of Duty: Modern Warfare 2

92 FPS

Red Dead Redemption 2

140 FPS

Resident Evil Village (Ray Tracing)

98 FPS

God of War

108 FPS

Assassin's Creed Valhalla

132 FPS

Doom Eternal (Ray Tracing)



AMD RADEON™ GRAPHICS



NEXT-LEVEL GAMING WITH AMD ADVANTAGE™ LAPTOPS

AMPLIFIED PERFORMANCE

Experience a new level of speed and responsiveness with award-winning AMD Ryzen™ processors and AMD Radeon™ graphics. Unlock even more performance through smart technologies, exclusive to AMD configured systems.



PREMIUM DISPLAY

AMD Advantage™ laptops enable high refresh, low-latency, stutter and tear-free gaming on vividly bright, hyper responsive displays.

BUILT TO GAME

AMD Advantage™ systems are engineered for high-performance gaming with optimized thermals to stay cool and quiet no matter how long you play.

ELEVATING GAME PERFORMANCE

AMD SOFTWARE: ADRENALIN EDITION™

AMD RADEON™ IMAGE SHARPENING¹

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

AMD RADEON™ BOOST²

Dynamically adjusts resolution while gaming to deliver higher frame rates and more immediate response.

AMD RADEON™ ANTI-LAG³

Reduces input latency for ultra-fast response times.

AMD RADEON™ CHILL

Dynamically regulates framerates based on in-game movements.

AMD RADEON™ SUPER RESOLUTION (RSR)⁴

An in-driver upscaling feature that uses the same algorithm found in AMD FidelityFX™ Super Resolution (FSR) technology to boost frame rates.

MAXIMUM FIDELITY

AMD FIDELITYFX™ TECHNOLOGY⁵

AMD FidelityFX™ technology 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)⁶

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

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™ Technology⁷** enhances performance in select titles through data transfer between AMD processors and graphics.

AMD RADEON™ GRAPHICS FOR DESKTOPS



GRAPHICS

SPECIFICATIONS

AMD RADEON™ 7000 MODEL	ARCHITECTURE	MAX POWER (UP TO)	GAME CLOCK ¹	VRAM
AMD Radeon™ RX 7900 XTX	RDNA™ 3	355W	2300 MHz	24 GB
AMD Radeon™ RX 7900 XT	RDNA™ 3	315W	2000 MHz	20 GB
AMD Radeon™ RX 7600	RDNA™ 3	165W	2250 MHz	8 GB

RECOMMENDED USE CASES

● = BEST ◐ = BETTER ○ = GOOD

Product Model	FHD Gaming	QHD Gaming	UHD (4K) Gaming
NEW AMD RADEON™ RX 7900 XTX	●	●	●
NEW AMD RADEON™ RX 7900 XT	●	●	●
AMD RADEON™ RX 7600	●	○	
AMD RADEON™ RX 6950 XT/ 6900 XT	●	●	●
AMD RADEON™ RX 6800 XT	●	●	●
AMD RADEON™ RX 6800	●	●	◐
AMD RADEON™ RX 6750 XT / 6700 XT	●	●	○
AMD RADEON™ RX 6650 XT / 6600 XT	●	◐	
AMD RADEON™ RX 6600	●	○	
AMD RADEON™ RX 6500 XT	●		
AMD RADEON™ RX 6400	●		

SPECIFICATIONS

AMD RADEON™ 6000 MODEL	ARCHITECTURE	MAX POWER (UP TO)	GAME CLOCK ¹	VRAM
AMD Radeon™ RX 6950 XT	RDNA™ 2	335W	2100 MHz	16 GB
AMD Radeon™ RX 6900 XT	RDNA™ 2	300W	2015 MHz	16 GB
AMD Radeon™ RX 6800 XT	RDNA™ 2	300W	2015 MHz	16 GB
AMD Radeon™ RX 6800	RDNA™ 2	250W	1815 MHz	16 GB
AMD Radeon™ RX 6750 XT	RDNA™ 2	250W	2495 MHz	12 GB
AMD Radeon™ RX 6700 XT	RDNA™ 2	230W	2424 MHz	12 GB
AMD Radeon™ RX 6650 XT	RDNA™ 2	180W	2410 MHz	8 GB
AMD Radeon™ RX 6600 XT	RDNA™ 2	160W	2359 MHz	8 GB
AMD Radeon™ RX 6600	RDNA™ 2	132W	2044 MHz	8 GB
AMD Radeon™ RX 6500 XT	RDNA™ 2	107W	2610 MHz	8 GB
AMD Radeon™ RX 6400	RDNA™ 2	53W	2039 MHz	4 GB

Web Browsing, Email & Social	Watching 4K Media & Content	Esports Gaming	AAA Gaming	Live Game Streaming & Video Editing	VR Gaming	Hardware Raytracing
●	●	●	●	AV1 ● ENC	●	2 ND ● GEN
●	●	●	●	AV1 ● ENC	●	2 ND ● GEN
●	●	●	●	AV1 ◐ ENC	○	2 ND ◐ GEN
●	●	●	●	●	●	●
●	●	●	●	●	●	●
●	●	●	●	●	●	◐
●	●	●	●	◐	◐	○
●	●	●	◐	◐	○	○
●	◐	◐	◐		○	
●	◐	◐	○			

1. GD-147

1. GD-147. AV1 ENC stands for AV1 Encoding / Decoding.

AMD RADEON™ GRAPHICS FOR MOBILE



SPECIFICATIONS

AMD RADEON™ S SERIES MODEL	ARCHITECTURE	MAX POWER (UP TO)	GAME CLOCK ¹	VRAM
AMD Radeon™ RX 7700S	RDNA™ 3	100W	2200 MHz	8 GB
AMD Radeon™ RX 7600S	RDNA™ 3	75W	1865 MHz	8 GB
AMD Radeon™ RX 6800S	RDNA™ 2	100W	1975 MHz	8 GB
AMD Radeon™ RX 6700S	RDNA™ 2	80W	1890 MHz	8 GB
AMD Radeon™ RX 6600S	RDNA™ 2	80W	1881 MHz	4 GB
AMD Radeon™ RX 6550S	RDNA™ 2	50W	2170 MHz	4 GB

RECOMMENDED USE CASES

● = BEST ◐ = BETTER ○ = GOOD

Product Model	FHD Gaming	QHD Gaming	UHD (4K) Gaming
AMD RADEON™ RX 6850M XT	●	●	◐
AMD RADEON™ RX 6800M	●	●	○
AMD RADEON™ RX 6700M	●	●	○
AMD RADEON™ RX 7600M XT	●	◐	
AMD RADEON™ RX 7600M	●	◐	
AMD RADEON™ RX 6650M XT	●	◐	
AMD RADEON™ RX 6650M	●	○	
AMD RADEON™ RX 6600M	●		
AMD RADEON™ RX 6550M	◐		
AMD RADEON™ RX 6500M	◐		
AMD RADEON™ RX 6450M	◐		
AMD RADEON™ RX 6300M	○		
AMD RADEON™ RX 6800S	●	◐	
AMD RADEON™ RX 7700S	●	◐	
AMD RADEON™ RX 6700S	●	◐	
AMD RADEON™ RX 7600S	●	◐	
AMD RADEON™ RX 6600S	●		
AMD RADEON™ RX 6550S	◐		

SPECIFICATIONS

AMD RADEON™ M-SERIES MODEL	ARCHITECTURE	MAX POWER (UP TO)	GAME CLOCK ¹	VRAM
AMD Radeon™ RX 7600M XT	RDNA™ 3	120W	2300 MHz	8 GB
AMD Radeon™ RX 7600M	RDNA™ 3	90W	2070 MHz	8 GB
AMD Radeon™ RX 6850M XT	RDNA™ 2	165W	2463 MHz	12 GB
AMD Radeon™ RX 6800M	RDNA™ 2	145W	2300 MHz	12 GB
AMD Radeon™ RX 6700M	RDNA™ 2	135W	2300 MHz	10 GB
AMD Radeon™ RX 6650M XT	RDNA™ 2	120W	2162 MHz	8 GB
AMD Radeon™ RX 6650M	RDNA™ 2	120W	2222 MHz	8 GB
AMD Radeon™ RX 6600M	RDNA™ 2	100W	2177 MHz	8 GB
AMD Radeon™ RX 6550M	RDNA™ 2	80W	2560 MHz	4 GB
AMD Radeon™ RX 6500M	RDNA™ 2	50W	2191 MHz	4 GB
AMD Radeon™ RX 6450M	RDNA™ 2	50W	2220 MHz	4 GB
AMD Radeon™ RX 6300M	RDNA™ 2	25W	1512 MHz	2 GB

Web Browsing, Email & Social	Watching 4K Media & Content	Esports Gaming	AAA Gaming	Live Game Streaming & Video Editing	VR Gaming	Hardware Raytracing
●	●	●	●	●	●	●
●	●	●	●	●	●	●
●	●	●	●	●	●	◐
●	●	●	●	●	●	◐
●	●	●	●	AV1 ● ENC	◐	2 ND ◐ GEN
●	●	●	●	AV1 ◐ ENC	◐	2 ND ◐ GEN
●	●	●	●	◐	◐	○
●	●	●	◐	◐	◐	○
●	●	◐	◐	○	○	○
●	○	○	○	○		
●	●	●	●	●	●	◐
●	●	●	●	AV1 ● ENC	◐	2 ND ◐ GEN
●	●	●	●	◐	◐	◐
●	●	●	●	AV1 ● ENC	◐	2 ND ◐ GEN
●	●	◐	◐	◐	○	○
●	●	◐	◐	○		

1. GD-147.

1. GD-147. AV1 ENC stands for AV1 Encoding / Decoding.

Footnotes

BC18-08 Testing as of Dec. 2022 by AMD Performance Labs using Octane, PCMark 10 Benchmark Suite, 7-Zip, System configuration for Intel Core i7-12450U Dell Latitude 5430, Intel Iris Xe Graphics, 16GB RAM (DDR4-3200), 1TB SSD, Windows 11 Pro. System configuration for Ryzen 5 7300U: Geland-Brnc, reference board, 8GB 3200MHz RAM, Samsung 980 Pro 1TB NVMe, AMD Radeon Graphics, BIOS RRM10068, Windows 11 Pro. PC manufacturers may vary configurations yielding different results. Results may vary.

PHX-3 Select AMD Ryzen 7040 Series processors with dedicated AI hardware onboard have the world's first dedicated AI hardware on an x86 PC processor

PHX-9 Based on testing by AMD as of 12/23/2022. Testing results demonstrated in Borderlands 3, Cyberpunk 2077, Rainbow Six Siege, Assassin's Creed: Valhalla, World of Tanks EnCore, League of Legends, Far Cry 2, Grand Theft Auto V, Shadow of the Tomb Raider, F1 2021, Strange Brigade, Total War: Three Kingdoms Battle, Ryzen™ 9 7940HS system: AMD reference motherboard configured with 4x4GB LPDDR5, Samsung 980 Pro 1TB SSD, Radeon 780M Graphics, Windows™ 11 64-bit, Core i7-1280P system: HP Elitebook 840 G3 configured with 16GB DDR5-4800, 1TB SSD, Intel Iris Xe, Windows 11 64-bit. System manufacturers may vary configurations, yielding different results.

PHX-10 Based on testing by AMD as of 12/23/2022. Testing results demonstrated in DaVinci Resolve BlackMagic, V-Ray, Blender, Cinebench R23 01, and Handbrake 1.5.1. Ryzen 9 7940HS system: AMD reference motherboard configured with 4x4GB LPDDR5, 1TB SSD, Radeon 780M Graphics, Windows 11 64-bit, Apple M1 Pro system: MacBook M1 Pro 16 configured with 32GB LPDDR5, 1TB SSD, Mac OS Monterey (12.6.1). System manufacturers may vary configurations, yielding different results.

PHX-26 Testing as of April 2023 by AMD Performance Labs using PCMark 10, Passmark, and Procyon Microsoft productivity benchmarks. Configuration for AMD Ryzen™ 7 7840U: AMD Mayan reference board, 16GB RAM, SSD 1TB, BIOS RMH08081A, integrated Radeon 700M graphics, Windows 11 Pro. Configuration for Intel Core i7-1360P: MSI Summit Flip 14, 32GB RAM, 1TB SSD, integrated Intel Iris Xe graphics, Windows 11 Pro. PassMark is a registered trademark of PassMark Software Pty Ltd. PCMark is a registered trademark of UL Solutions. PC manufacturers may vary configurations yielding different results. Results may vary. Claim is based on current market availability as of April 2023.

PHX-27 Testing as of April 2023 by AMD Performance Labs using PCMark 10 Digital Content Creation (DCC), HandBrake, Blender, and LAME MP3 benchmarks. Configuration for AMD Ryzen™ 7 7840U: AMD Mayan reference board, 16GB RAM, SSD 1TB, BIOS RMH08081A, integrated Radeon 700M graphics, Windows 11 Pro. Configuration for Intel Core i7-1360P: MSI Summit Flip 14, 32GB RAM, 1TB SSD, integrated Intel Iris Xe graphics, Windows 11 Pro. PCMark is a registered trademark of UL Solutions. PC manufacturers may vary configurations yielding different results. Results may vary. Claim is based on current market availability as of April 2023.

PHX-28 Testing as of April 2023 by AMD Performance Labs using 3DMark Timespy and the following game titles tested at 1080p; low settings: Far Cry 6, CS:GO, Grand Theft Auto V, Assassin's Creed: Valhalla, Borderlands 3, DOTA 2, 7840U: AMD Mayan reference board, 16GB RAM, SSD 1TB, BIOS RMH08081A, integrated Radeon 700M graphics, Windows 11 Pro. Configuration for Intel Core i7-1360P: MSI Summit Flip 14, 32GB RAM, 1TB SSD, integrated Intel Iris Xe graphics, Windows 11 Pro. PCMark is a registered trademark of UL Solutions. PC manufacturers may vary configurations yielding different results. Results may vary.

DRG-10: Based on testing by AMD as of 3/7/2023. Testing results demonstrated in 31 games at 1080p; high settings. Configuration for Ryzen™ 9 7945HX system: ASUS Strix S17 configured with 32GB (2x16GB) DDR5, 1TB SSD, GeForce RTX 4090 Graphics, Windows™ 11 64-bit. Configuration for Intel Core i9-13950HX system: Gigabyte Aorus 17X, configured with 32GB (2x16GB) DDR5, 1TB SSD, GeForce RTX 4090 Graphics, Windows 11 64-bit. System manufacturers may vary configurations, yielding different results. Performance may vary.

DRG-12: Based on testing by AMD as of 3/7/2023. Testing results demonstrated in Cinebench R23 nt while recording processor package power using HW info. Efficiency measured as performance/watt (performance/Watt used in test). Configuration for Ryzen™ 9 7945HX system: ASUS Strix Scar 17 configured with 32GB (2x16GB) DDR5, 1TB SSD, GeForce RTX 4090 Graphics, Windows™ 11 64-bit. Configuration for Intel Core i9-13950HX system: ASUS Strix Scar 16 configured with 32GB (2x16GB) DDR5, 1TB SSD, GeForce RTX 4090 Graphics, Windows™ 11 64-bit. System manufacturers may vary configurations, yielding different results. Performance may vary.

RPI-20: Testing as of 15 November, 2022, by AMD Performance Labs using the following hardware: AMD AMS Reference Motherboard with AMD Ryzen™ 9 7900, G.Skill DDR5-6000C30 (F5-6000J038F16XK2-TZSN) and AMD Wraith Prism Cooler, versus AMD Reference motherboard with Ryzen 9 5900X and Radeon™ 3000C16, and Asatke 280 cooler. ALL SYSTEMS configured with open air test bench, AMD Radeon 6950XT (driver-Adrenalin 22.11.2 Optional), Windows™ 11, AMD Smart Access Memory ON, Virtualization-Based Security (VBS) OFF, Games tested: DOTA™ 2, (Vulkan™), Shadow of the Tomb Raider™ (DirectX™ 12), Borderlands™ 3, and CS:GO™ (DirectX™ 9). System manufacturers may vary configurations, yielding different results.

RPI-33: Testing as of 15 December, 2022, by AMD Performance Labs using the following hardware: AMD Ryzen 7 7800X3D and Ryzen 9 7950X3D system: AMS Reference Motherboard, 32GB DDR5-6000, and Arctic Liquid Freezer II cooler. Intel Core i9-13900K system: ASUS Strix Z790-E Gaming Motherboard, 32GB DDR5-6000, and Arctic Liquid Freezer II cooler. ALL SYSTEMS configured with an open air test bench, Windows 11, AMD Smart Access Memory technology ON, Virtualization-Based Security (VBS) OFF. Gaming performance calculated with Assassin's Creed: Valhalla, Borderlands 3, CS:GO, Cyberpunk 2077, Deus Ex: Mankind Divided, DOTA 2, F1 2021, Far Cry 6, Final Fantasy XIV, Ghost Recon Breakpoint, Grand Theft Auto V, Hitman 3 Dubai CPU, Hitman 3 Dubai GPU, Metro Exodus, Middle Earth: Shadow of War, Shadow of the Tomb Raider, Strange Brigade, Total War: Three Kingdoms Battle, Warhammer: Dawn of War II, Watchdogs: Legion, Wolfenstein Youngblood (LxM), World of Tanks EnCore, Riftbreaker (CPU), Red Dead Redemption 2, Forza Horizon 5, Guardians of the Galaxy, Tiny Tina's Wonderland, DIRT 5, Civilization VI, Horizon Zero Dawn, Ashes of the Singularity (GPU), Total War Warhammer III (Battle). F1 2022, all at 1080p high settings. System manufacturers may vary configurations, yielding different results.

RX-842 Testing done by AMD performance labs November 28, 2022 on RX 7900 XTX, on 22.40.00.24 driver. AMD Ryzen 9 7900X processor, 32GB DDR5-6000MT, AMS motherboard, Win11 Pro with AMD Smart Access Memory technology enabled. Tested at 4K in the following games: Call of Duty: Modern Warfare, God of War, Red Dead Redemption 2, Assassin's Creed Valhalla, Resident Evil Village (Raytracing ON), Doom Eternal (Ray Tracing ON). System manufacturers may vary configurations, yielding different results. Performance may vary.

CD-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. AMD may also void warranties offered by the system manufacturer or retailer. Users assume all risks and liabilities that may arise out of overclocking / undervolting AMD processors, including without limitation, failure of or damage to hardware, reduced system performance and/or data loss, corruption or vulnerability.

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

CD-150 Boost Clock Frequency is the maximum frequency achievable on the CPU running a bursty workload. Boost clock achievability, frequency, and sustainability will vary based on several factors, including but not limited to: thermal conditions and variation in applications and workloads.

CD-156: Radeon Image Sharpening is compatible with DirectX 11/12 and Vulkan APIs. DirectX 9 support with Radeon RX 5000 Series GPUs only. Compatible with Windows 10/11. Hardware compatibility includes Radeon RX 400 series discrete graphics and newer dGPUs, Ryzen 2000 Series processors and newer CPUs, including hybrid and detachable graphics configurations. No mGPU support.

CD-157 Radeon Anti-Lag is compatible with DirectX 9/11/12 APIs, and Windows 10/11. Hardware compatibility includes Radeon RX 400 Series discrete graphics and newer dGPUs and Ryzen 2000 Series and newer CPUs, including hybrid and detachable graphics configurations. No mGPU support.

CD-158 Radeon Boost is compatible with Windows 10/11 in select titles. Hardware compatibility includes Radeon RX 400 dGPUs and newer, Ryzen 2000 Series CPUs and newer, including hybrid and detachable graphics configurations. No mGPU support. Radeon Boost Variable Rate Shading is compatible with AMD Radeon RX 6000 Series Graphics and newer. For a list of compatible titles see <https://www.amd.com/en/technologies/radeon-boost>.

CD-176 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.

CD-178 Smart Access Memory technology is compatible with AMD Radeon RX 5000 Series CPUs or later, Ryzen 3000 Series CPUs or later (excluding Ryzen 5 3400G and Ryzen 3 3200G CPUs), AMD desktop kits (4000 Series and later), and an AMD SDD Series motherboard or later with the latest BIOS update available on the vendor website. OEM support is required. For additional information see <https://www.amd.com/en/technologies/smart-access-memory>.

CD-197 Radeon Super Resolution works with games that support exclusive and borderless full-screen modes. AMD Software: Adrenalin Edition 22.5.2 or newer is required.

CD-200 AMD FidelityFX™ Super Resolution (FSR) is available to select applications and requires developer integration. FSR is "application dependent" and scales across a broad spectrum of new and older AMD products, including integrated graphics. It is optimized for AMD RDNA™ and AMD RDNA 2™ architecture-based Radeon™ PRO W6000 and W5000 series graphics cards. It is also compatible with all AMD Ryzen™ desktop and mobile processors with AMD Radeon™ graphics if the minimum requirements of the application are met. FSR is also supported on select competitor graphics solutions. AMD does not provide technical or warranty support for AMD FidelityFX Super Resolution enablement on other vendor's graphics cards.

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