

AMD RYZEN™ 9000 SERIES DESKTOP PROCESSORS

QUICK REFERENCE GUIDE



Born to lead. Destined to Win. Built using the latest breakthrough 4nm processor technology, AMD Ryzen™ 9000 Series processors are the ultimate advanced processor for fast performance, designed to deliver incredible efficiency life while remaining cool and quiet.

INCREDIBLE POWER

- High-performance “Zen 5” core technology¹
- A powerhouse processor for gaming and content creation
- 4nm manufacturing process

LEADERSHIP TECHNOLOGIES

- AMD 3D V-Cache™ technology for incredible gaming experiences
- AMD EXPO™ technology for one-touch memory overclocking^{2,3}
- Designed to deliver incredible AI acceleration with AMD Radeon™ graphics capabilities

DEPENDABLE LONGEVITY

- Future upgrade support available
- Fast DDR5 memory speeds
- Incredible bandwidth with PCIe® 5.0

PRODUCT SPECIFICATIONS

PROCESSOR MODEL	CORES/ THREADS	TYPICAL TDP	MAX/BASE FREQUENCY ⁴ (UP TO)	TOTAL CACHE L2 + L3	PCIe® GEN	UNLOCKED FOR OVERCLOCKING ²	COOLER INCLUDED	BUILT-IN GRAPHICS
AMD RYZEN™ 9950X3D	16/32	170 W	5.7 / 4.3 GHz	144 MB	5.0	Yes	No	AMD Radeon™ Graphics
AMD RYZEN™ 9 9950X	16/32	170W	5.7 / 4.3 GHz	80 MB	5.0	Yes	No	AMD Radeon™ Graphics
AMD RYZEN™ 9 9900X3D	12/24	120W	5.5 / 4.4 GHz	140 MB	5.0	Yes	No	AMD Radeon™ Graphics
AMD RYZEN™ 9 9900X	12/24	120W	5.6 / 4.4 GHz	76 MB	5.0	Yes	No	AMD Radeon™ Graphics
AMD RYZEN™ 7 9800X3D	8/16	120W	5.2 / 4.7 GHz	104MB	5.0	Yes	No	AMD Radeon™ Graphics
AMD RYZEN™ 7 9700X	8/16	65W	5.5 / 3.8 GHz	40 MB	5.0	Yes	No	AMD Radeon™ Graphics
AMD RYZEN™ 5 9600X	6/12	65W	5.4 / 3.9 GHz	38 MB	5.0	Yes	No	AMD Radeon™ Graphics
AMD RYZEN™ 5 9600	6/12	65W	5.2 / 3.8 GHz	38 MB	5.0	Yes	AMD Wraith Stealth	AMD Radeon™ Graphics

THIS CHART ILLUSTRATES RELATIVE PRODUCT POSITIONING ON KEY FUNCTIONALITY AND IS NOT NECESSARILY AN INDICATION OF RELATIVE PERFORMANCE. PERFORMANCE MAY VARY BY APPLICATION.

FEATURES

AMD EXPO™ TECHNOLOGY

- Improved memory performance designed for getting in the game faster² can unlock higher and smoother frame rates

AMD 800 SERIES MOTHERBOARD-READY

- AMD X870E, X870, B850, B840 chipsets
- Support for PCIe® Gen 5
- Memory overclocking support
- USB 4.0

ENTHUSIAST-CLASS AI READY

- Built-in AI acceleration
- Ideal for enthusiast-class consumer AI applications
- Great platform for enabling AI-accelerated graphics

GAMING WITH AMD 3D V-CACHE™ TECHNOLOGY

- Extra memory sitting below processor cores for direct access to the cooler
 - When a chip runs cooler, it can run faster
 - Up to 144MB of on-chip memory
 - Perfect for users who want faster gaming performance
- Includes the following AMD Ryzen™ 9000 series desktop processor models:
 - AMD Ryzen™ 9 9950X3D
 - AMD Ryzen™ 9 9900X3D
 - AMD Ryzen™ 7 9800X3D

RECOMMENDED USAGE CHART

BEST

BETTER

GOOD

PROCESSOR FAMILY	PRODUCTIVITY & ENTERTAINMENT	SMOOTH GAMING	GAME STREAMING	CONTENT CREATION
AMD RYZEN™ 9 PROCESSORS THE PERFECT PROCESSOR FOR ELITE GAMERS AND CREATORS.	●	●	●	●
AMD RYZEN™ 7 PROCESSORS THRILLING SPEED FOR POWERFUL PCS.	●	●	◐	◐
AMD RYZEN™ 5 PROCESSORS THE PERFECT SPEED FOR WORK AND PLAY.	●	◐	○	○
AMD RYZEN™ 3 PROCESSORS PERFORMANCE ON-THE-GO STARTS HERE.	●	○		

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NEXT STEPS

Find out more by visiting www.amd.com/RYZEN
 For more AMD product training, sign up at arena.amd.com and earn rewards!

ENDNOTES

1. The information contained herein is for informational purposes only, and is subject to change without notice. Timelines, roadmaps, and/or product release dates shown in these slides are plans only and subject to change. "Zen 5" is a codename for AMD architecture, and is not a product name. GD-122
2. 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-106
3. AMD's product warranty does not cover damages caused by overclocking, even when overclocking is enabled via AMD hardware and/or software. GD-26
4. 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. GD-150