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AMD Ryzen PRO Sales Guide

April 2024

Get Started

For feedback or more information,
contact z1.zenmaster@amd.com

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COMMERCIAL SALES PLAYBOOK

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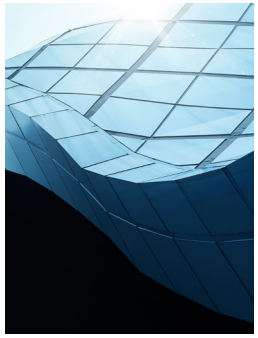
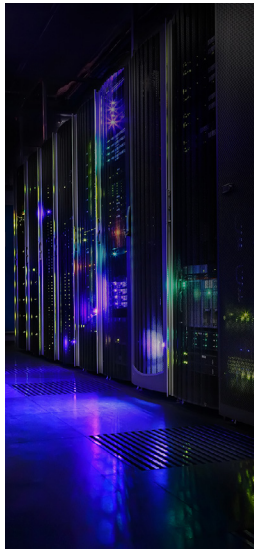
Overview



CONTINUED MOMENTUM

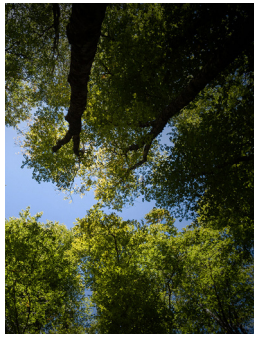
- Took market share from Intel in the server, desktop, and notebook categories in Q4 2023. Read the article.
- Amassed 23.3% unit share and 29.4% revenue share in the EPYC server market since the initial launch in 2017.
- Controlled 19.5% of Mobile PC processor shipments, up from 16.5% in the previous quarter and up from 15.7% in Q3 2022, a 2.9% gain quarter-over-quarter and 3.8% year-over-year



LEADING THE PACK WITHOUT COMPROMISE

AMD products provide leadership performance without compromising energy efficiency. Of the TOP 500 Super Computers in the world:

- The No. 1 spot is held by the Frontier system at Oak Ridge National Laboratory (ORNL) in the US. (Based on the latest HPE Cray EX235a architecture and equipped with 3rd Gen AMD EPYC™ CPUs optimized for HPC and AI, with AMD Instinct™ 250X accelerators.) Frontier is still the only system reported with an HPL performance exceeding one Exaflop/s.
- AMD powers 7 of the top 10 “Green 500” supercomputers globally, with Frontier taking the #2 position. Frontier, the world’s most powerful supercomputer, is also the 2nd most energy efficient and the leader in performance per watt.



SUSTAINABILITY

- Accelerating server energy efficiency, lowering TCO, and delivering high-performance computing
- Advancing environmental sustainability across our operations, supply chain and products.
- As of mid-2023, we are on track toward achieving 13.5x improvement in energy efficiency compared to 2020. EPYC-030a

ABOUT AMD

AMD is the leader in high performance and adaptive computing, powering the products and services that help solve the world’s most important challenges. Our innovative technologies—from powerful processors and graphics accelerators to an open ecosystem—advance the future of the data center, embedded, gaming, and PC markets. Hundreds of millions of consumers, leading Fortune 500 businesses, and cutting-edge scientific research facilities around the world rely on AMD technology.

STRONG PORTFOLIO

The acquisition of Xilinx and Pensando gives AMD a strong portfolio of adaptive and high-performance computing solutions. We are positioned to capture a large share of a $135 billion market opportunity across cloud, edge, enterprise, and intelligent devices with leadership compute engines that can be optimized for workloads.

STRONG PARTNERSHIPS

AMD continues to drive deep co-development with some of the largest global technology leaders, including:

- Acer, Amazon Web Services
- Apple, Asus, Dell, Google Cloud
- Hewlett Packard Enterprise
- Lenovo, Microsoft, Nutanix
- Oracle, Sony, Supermicro
- Twitter, VMware

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AMD FOR ARTIFICIAL INTELLIGENCE

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AMD for Artificial Intelligence

OVERVIEW

AI is defining the next era of computing. At AMD, we see the benefits of AI every day, from enabling medical research, curbing credit card fraud, reducing congestion in cities, or simply making life easier. To realize the full potential of AI, the technology must be pervasive and span from the cloud to the edge to endpoints. Our broad portfolio of high performance and adaptive hardware and software solutions make AI possible.

AMD PROPELS THE AI LIFECYCLE

AI training is data- and processing-intensive. Large data sets are fed through models to train them to see patterns. This processing requires a significant amount of computing power to make the model function with required accuracy.

AI inferencing processes incoming data in real time. Inferencing happens close to the data: in a retail store, in a moving automobile, on factory floors, and in radiology departments, where efficiency is everything.

BROAD INDUSTRY IMPACT

AI models are helping businesses. **Computer vision** helps recognize and classify objects and detect anomalies. **Natural language processing** helps recognize speech and make meaning out of written words to assist customers. **Recommendation systems** help predict everything from user needs to telemetry data anomalies.

Automotive: Propel self-driving cars, recognize pedestrians and other vehicles, recognize spoken in-car commends.

Financial services: Stop credit-card fraud, watch for suspicious documents including customer checks

Manufacturing: Monitor quality of manufactured products, obtain proactive maintenance operations.

Medical: Detect anomalies including fractures and tumors, and use the same models for medical research.

Retail: Automate checkout lines, create autonomous shopping experiences, offer alternative products online or in stores.

Service automation: Take action based on spoke requests, point customers to solutions and product alternatives.

AI FOR DATA CENTER

AMD EPYC processors offer exceptional performance, energy efficiency, and security for HPC and AI workloads for the data center and vertical markets. AMD Instinct accelerators feature large on-chip memory and fast processing units to power inferencing workloads.

AI FOR EDGE

The AMD portfolio and Adaptive Compute solutions provide optimized hardware acceleration of large-scale AI model training to real-time inferencing and performance-critical functions.

AI FOR CLIENT

AMD Ryzen 7040 and 8040 Series processors feature built-in AI engines and to help enable new PC and laptop applications that improve business productivity and collaboration, and boost creativity.

AI FOR CLOUD

AMD EPYC CPUs, AMD Instinct accelerators, and AMD Radeon PRO Series graphics cards help users harness the power of AI processing and tap into exceptional performance and platform support in the cloud.

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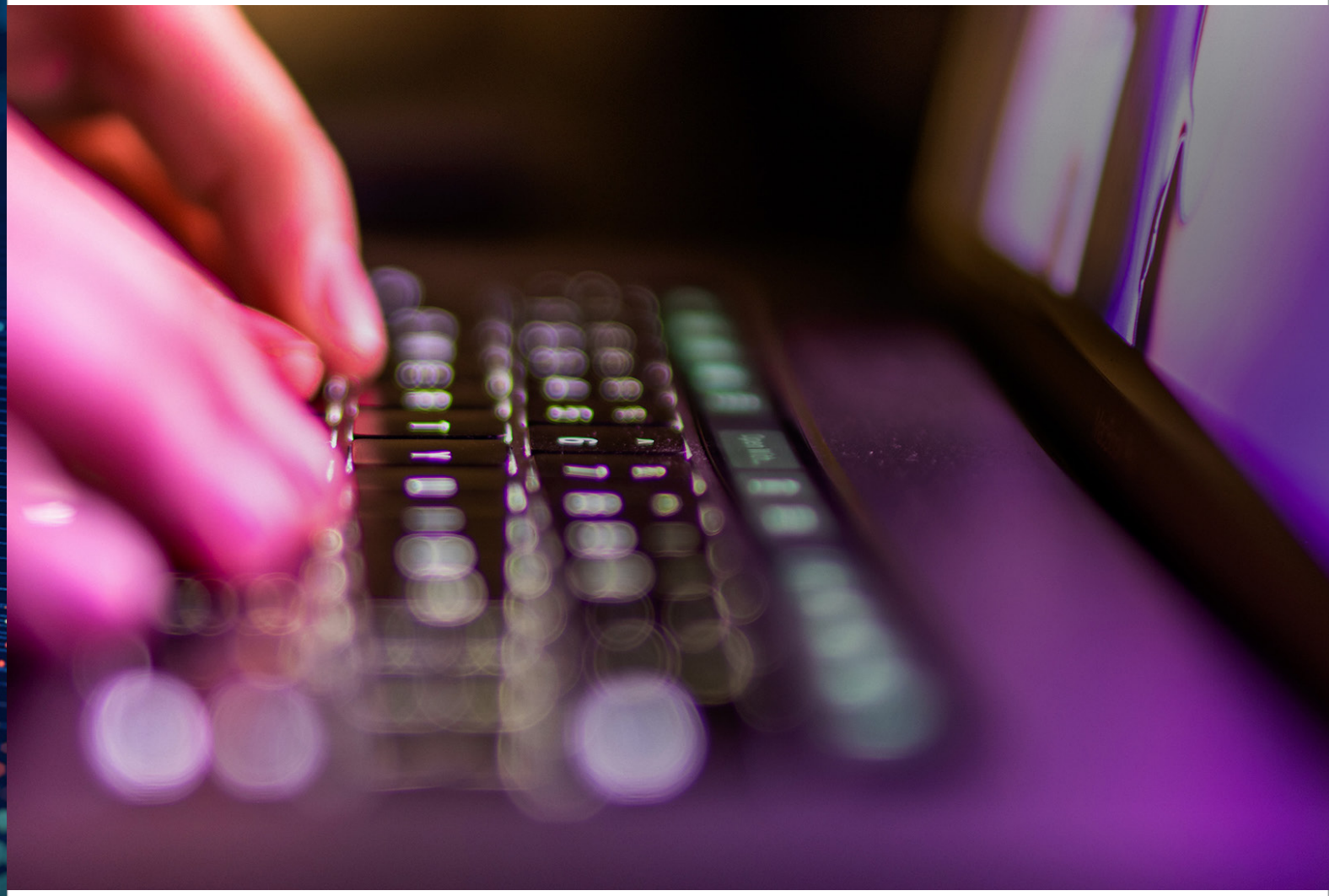
AMD RYZEN PRO



THE FASTEST-GROWING PROCESSOR BRAND FOR COMMERCIAL PCs RNP-1

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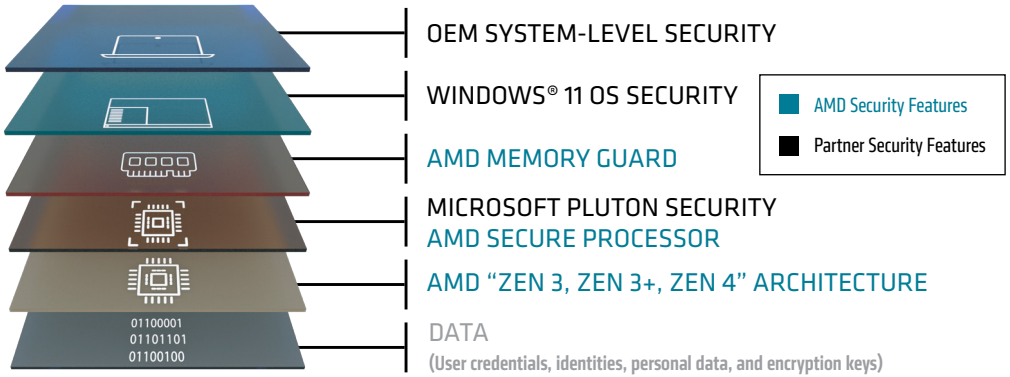
AMD PRO Technologies

AMD PRO technologies deliver a complete set of features that are essential for modern businesses. SMBs, enterprises, IT administrators, and general office workers can take advantage of the cutting-edge security features, robust manageability tools, and enterprise-grade stability and reliability capabilities built into AMD PRO technologies.

AMD PRO SECURITY

AMD PRO security helps users stay ahead of security threats. A multilayered set of security features at the hardware, OS, and system level are ready to help defend against the sophisticated attacks of today and tomorrow.



MULTILAYERED SECURITY

LAYER	FEATURES	BENEFITS
OEM system	OEM security features	Deep collaboration between OS and hardware providers with OEMs to complement and enable enterprise-grade security features to protect data
OS	Windows 11 security	Helps block software and firmware attacks from the moment devices are turned on. Full support for Secured-core PC initiative, Hardware Enforced Stack Protection, Advanced Threat Protection, Enhanced Sign-On, Bitlocker, etc.
Hardware and firmware	AMD "Zen" architecture	AMD "Zen" Core architecture ("Zen 3, Zen 3+, Zen 4") with AMD Shadow Stack, a robust security approach to help protect against control-flow attacks
	AMD Secure Processor	Dedicated security processor that validates code before it is executed to help ensure data and application integrity
	Microsoft Pluton Security Processor	A chip-to-cloud security technology designed and updated by Microsoft, that enhances security to the core of Windows® 11 PCs with continuous protection for user credentials, identities, personal data, and encryption (FIPS 140-3 Level 2 certification)
	AMD Memory Guard	Delivers real-time encryption of system memory to help defend against physical attacks should a laptop be lost or stolen
	AMD Shadow Stack	Robust security approach to help protect against control-flow attacks by checking the normal program stack against a hardware-stored copy and enabling Microsoft Hardware Enforced Stack Protection in Windows® 11 security as part of a comprehensive set of AMD security features to help secure PCs
	FIPS 140-3 Level 1 certification	Government encryption standard adopted by private sector as best practice for validating the security of cryptographic hardware

AMD PRO MANAGEABILITY

AMD PRO manageability delivers a robust feature set that simplifies the modern IT deployment and management of an ever-growing and changing fleet.

FLEXIBILITY AND CHOICE WITH MULTIVENDOR SUPPORT

Open-standard features for wired and wireless devices

Wireless support for 33 DASH profiles

SEAMLESS DEPLOYMENT

Support for cloud-based configuration technologies such as Windows Autopilot

SIMPLIFIED MANAGEMENT AT SCALE

Support for out-of-band and in-band manageability, such as Microsoft Endpoint Manager

AMD PRO BUSINESS READY

AMD PRO business ready provides IT decision makers with long-term consistency to simplify IT planning and help maximize return on investment (ROI). All AMD Ryzen PRO processors offer enterprise-grade computing solutions that are designed for quality, stability, reliability, and platform longevity.

- Image stability: 18 months of planned software stability brings peace of mind
- Processor availability: 24 months of planned availability for a stable enterprise
- Quality: Enhanced QA + Validation process to help ensure enterprise-grade quality
- Reliability: Continuous validation to help ensure long-term stability and quality

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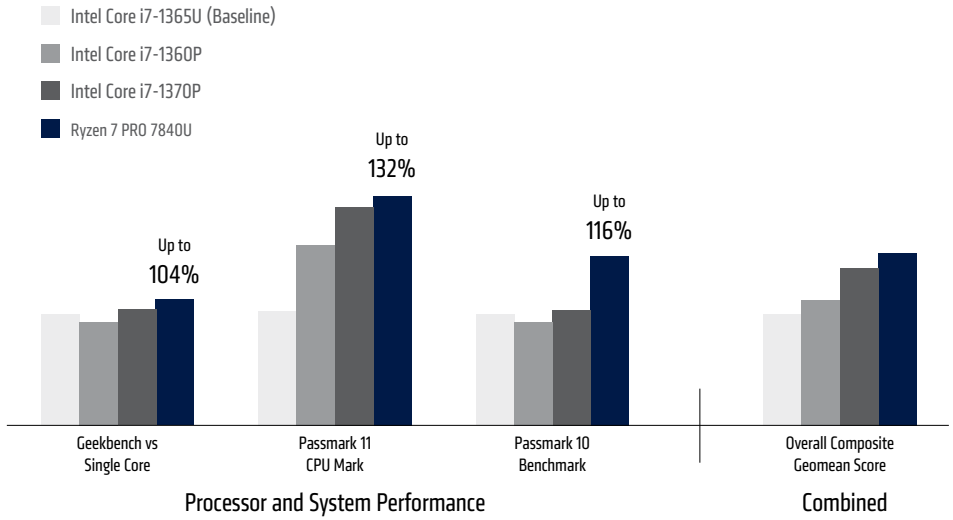
AMD Ryzen™ PRO 7040 Series Mobile

ULTIMATE PERFORMANCE. PROFESSIONAL EXPERIENCES.

Engineered to outperform, AMD Ryzen™ PRO 7040 Series processors provide leadership power efficiency and are the world's most advanced processors for premium business laptops. A new "Zen 4" architecture and advanced 4nm technology deliver exceptional power efficiency and uncompromising battery life (up to 30 hours projected). With up to 8 high-performance processing cores, AMD's most advanced graphics yet (AMD RDNA™ 3), and the world's first integrated AI engine in x86 laptop processors, these innovative processors continue to push computing to new heights.

	AMD RYZEN PRO 7040 SERIES MOBILE SPECIFICATIONS					
PROCESSOR	CORES/ THREADS	BOOST GD-150/BASE FREQUENCY (GHz)	L2+L3 CACHE (MB)	AMD RADEON™ GRAPHICS	AMD RYZEN AI	TDP
PRO 7940HS	8/16	Up to 5.2/4.0	24	√	√	45W
PRO 7840HS	8/16	Up to 5.1/3.8	24	√	√	45W
PRO 7640HS	6/12	Up to 5.0/4.3	22	√	√	45W
PRO 7840U	8/16	Up to 5.1/3.3	24	√	√	28W
PRO 7640U	6/12	Up to 4.9/3.5	22	√	√	28W
PRO 7540U	6/12	Up to 4.9/3.2	22	√	—	28W

PERFORMANCE FOR BUSINESS APPLICATIONS PHXP-27, PHXP-28



AI ISN'T COMING—IT'S HERE

AI is transforming the way people create, interact, work, and use computers every day, and is the most significant innovation for Windows laptops in years. Running AI workloads in the cloud is costly and unsustainable at scale. AMD is ushering in the era of hybrid AI, where processing can be done completely on the PC or in partnership with the cloud, depending on the use case.

AMD RYZEN AI

AMD Ryzen AI is the world's first AI engine to be integrated into an x86 processor. It enables immersive AI experiences onthe PC, starting with AI-powered collaboration in Microsoft Teams and other leading video conferencing applications at extreme low power, high speed, and quiet operation. AI-assisted video conferencing enhances remote work, making employees more productive in different environments.

INTEGRATION THAT DELIVERS

Select AMD Ryzen PRO 7040 Series processors tightly integrate CPU, GPU, and AMD Ryzen AI cores on the same chip. Key cabability include:

- More processing for data-intensive and power-hungry AI workloads
- Offloaded computation, freeing CPUs and GPUs for other tasks
- Reduced cloud reliance, helping safeguard data from exposure and assimilation in neural network models
- Incredible battery life, elevated user experiences, and quiet operation

RESOURCES

- AMD PRO Technologies: What's New for AMD Ryzen PRO 7040 Series
- AMD Ryzen AI Solution Guide
- AMD Ryzen 7040U Series Battlecard
- Future of Windows Business Laptops
- Introducing AMD Ryzen PRO 7040 Series Processors

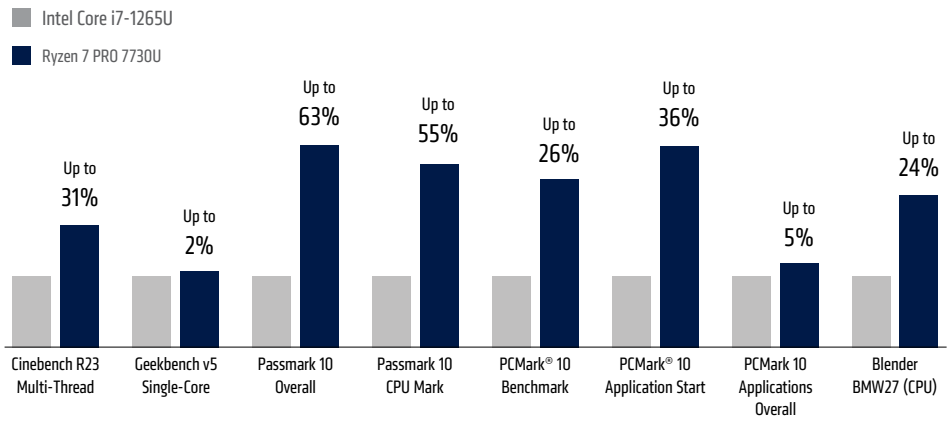
AMD Ryzen™ PRO 7030 Series Mobile

ENGINEERED FOR DEMANDING BUSINESS ENVIRONMENTS

Fast-moving businesses need laptop performance that meets the demands of tomorrow, not just today. Professional laptops powered by AMD Ryzen™ PRO 7030 Series processors deliver accelerated productivity and enhanced collaboration—giving businesses the performance edge and freedom to work from anywhere.

AMD RYZEN PRO 7030 SERIES MOBILE SPECIFICATIONS						
PROCESSOR	CORES/ THREADS	BOOST GD-150 /BASE FREQUENCY (GHz)	L2+L3 CACHE (MB)	AMD RADEON™ GRAPHICS	TDP	INTEL GD-75 COMPARISON
PRO 7730U	8/16	Up to 4.5/2.0	20	√	15W	Core i7-1265U Core i7-1260P Core i7-1365U
PRO 7530U	6/12	Up to 4.5/2.0	19	√	15W	Core i5-1245U Core i5-1250P Core i5-1345U
PRO 7330U	4/8	Up to 4.3/2.3	10	√	15W	

PERFORMANCE FOR BUSINESS APPLICATIONS BCLR-02



LEADERSHIP PERFORMANCE

- "Zen 3" architecture with higher frequencies, higher instructions per clock, and lower latency than previous-generation "Zen" architectures
- Up to 8 high-performance processing cores for responsive multitasking workloads
- Advanced 7nm technology for leadership performance and amazing battery life
- AMD RDNA™ 2, the world's most powerful integrated graphics RMP-12 system, for high-resolution and multi-display configurations
- Layered security approach

RESOURCES

- AMD Ryzen PRO 7000 Series Processors with Radeon Graphics
- AMD Ryzen PRO 7000 Series Security White Paper
- AMD Ryzen PRO 7030 Battlecard
- AMD Ryzen PRO Desktop For Business: Quick Reference Guide
- AMD Ryzen PRO Power Efficiency Calculator
- Business Laptops Featuring AMD Ryzen PRO 7030 Series
- Introducing AMD Ryzen PRO 7000 Series (Arena Training)
- Performance and Competitive Comparision Deck

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AMD RYZEN™ PRO 6000 Series Mobile

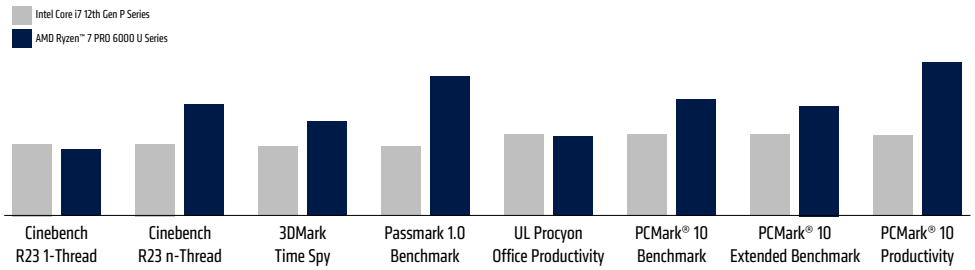
ULTIMATE PERFORMANCE, PROFESSIONAL EXPERIENCES

Technology should be as innovative and ever-evolving as the companies that rely on it. Power users need to work and collaborate and unleash the performance of demanding business and content creation applications, whether they are in the office or on the road.

Whether you need studio-quality videoconferencing, power-efficient productivity and creativity on the go with stunningly long battery life, or blazing fast connectivity for data and devices, AMD Ryzen PRO 6000 Series Mobile processors offer the ultimate performance and professional experiences you need from your business laptops.

AMD RYZEN PRO 6000 SERIES MOBILE SPECIFICATIONS						
PROCESSOR	CORES/ THREADS	BOOST GD-150/BASE FREQUENCY (GHz)	L2+L3 CACHE (MB)	AMD RADEON™ GRAPHICS	TDP	INTEL GD-75 COMPARISON
PRO 6950H	8/16	Up to 4.9/3.3	20	√	45W	Core i9-12900H
PRO 6950HS	8/16	Up to 4.9/3.3	20	√	35W	Core i9-12900H
PRO 6850H	8/16	Up to 4.7/3.2	20	√	45W	Core i7-12800H Core i7-12700H
PRO 6850HS	8/16	Up to 4.7/3.2	20	√	35W	Core i7-12800H Core i7-12700H
PRO 6650H	6/12	Up to 4.5/3.3	19	√	45W	Core i5-12600H Core i5-12500H
PRO 6650HS	6/12	Up to 4.5/3.3	19	√	35W	Core i5-12600H Core i5-12500H
PRO 6850U	8/16	Up to 4.7/2.7	20	√	15-28W	Core i7-1185G7 Core i7-1165G7
PRO 6650U	6/12	Up to 4.5/2.9	19	√	15-28W	Core i5-1145G7 Core i5-1135G7

PERFORMANCE FOR BUSINESS APPLICATIONS RMP-27, RMP-28



LEADERSHIP PERFORMANCE

- New "Zen 3+" architecture
- Up to 8 high-performance processing cores for responsive multitasking across collaboration, productivity, and content creation applications
- Advanced 6nm technology for exceptional power efficiency and uncompromising battery life
- AMD RDNA™ 2, the world's most powerful integrated graphics RMP-12 system, for high-resolution and multi-display configurations
- Integration with the Microsoft Pluton security processor, to help harden Windows 11 PCs with continuous protection for user identity, data, and applications

PREMIUM MOBILE EXPERIENCES

- New AI-based audio noise cancellation for studio-quality conferencing (requires OEM enablement)
- Intelligent battery management with the freedom to work on the go
- Next-gen connectivity, with long-range HD quality Bluetooth audio, universal docking with high-bandwidth 40 Gbps USB4, and blazing fast Wi-Fi 6E networking GD-149

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AMD RYZEN™ PRO 5000 Series Mobile

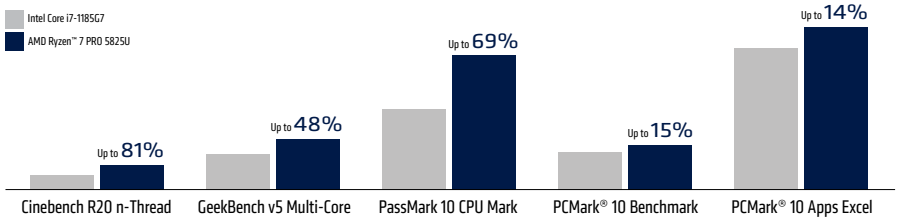
DESIGNED FOR BUSINESS ANYWHERE

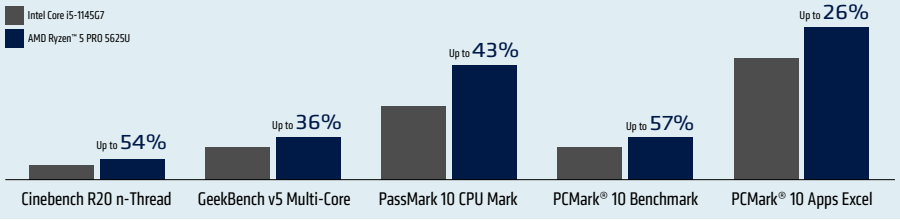
Modern business professionals continue to demand more performance and portability out of their laptops. That's because workflows involve everything from video conferencing to office apps—and shift from office to huddle room, home, or hotel.

With the world's most advanced processor technology,[CZM-26] and packed with the most processing cores available for ultrathin laptops, AMD Ryzen™ 5000 Series mobile processors offer the speed and responsiveness needed to ensure you never have to let performance get in the way of productivity.[CZM-38]

AMD RYZEN PRO 5000 SERIES MOBILE SPECIFICATIONS						
PROCESSOR	CORES/ THREADS	BOOST[GD-150]/BASE FREQUENCY (GHz)	L2+L3 CACHE (MB)	AMD RADEON™ GRAPHICS	TDP	INTEL[GD-75] COMPARISON
PRO 5875U	8/16	Up to 4.5/2.0	20	√	15W	Core i7-1185G7
PRO 5850U	8/16	Up to 4.4/1.9	20	√	15W	Core i7-1185G7
PRO 5675U	6/12	Up to 4.3/2.3	19	√	15W	Core i5-1145G7
PRO 5650U	6/12	Up to 4.2/2.6	19	√	15W	Core i5-1135G7
PRO 5475U	4/8	Up to 4.1/2.7	10	√	15W	Core i3-1125G7
PRO 5450U	4/8	Up to 4.0/2.6	10	√	15W	—

PERFORMANCE FOR BUSINESS APPLICATIONS[CZP-64, CZP-65]





LEADERSHIP PERFORMANCE

- Industry leading "Zen 3" Core architecture
- Up to 8 high-performance processing cores for responsive multitasking across collaboration, productivity, and content creation applications
- Advanced 7nm technology delivers exceptional power efficiency and long battery life

ENTERPRISE-CLASS SECURITY FEATURES

- The AMD Secure Processor is integrated on chip to help protect sensitive data.
- AMD Memory Guard provides full memory encryption to help protect data.
- AMD Shadow Stack is a robust security approach that helps protect against control-flow attacks.
- Deep integration with Microsoft and OEMs helps support secure Windows PCs.

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AMD RYZEN™ PRO 5000 Desktop

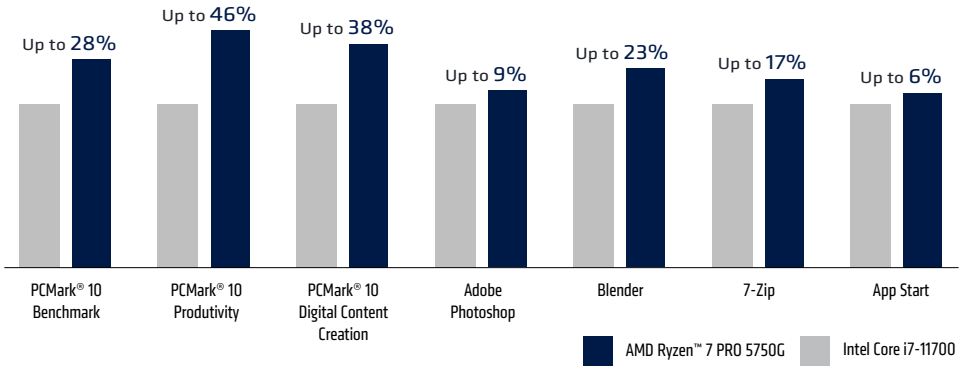
DESIGNED FOR MODERN BUSINESS WORKLOADS

IT decision makers are experiencing high demand for PCs that accommodate flexible work environments. Typical workflows now include video conferencing while screen sharing a presentation, searching the web for data and reports, and crunching numbers in a spreadsheet.

AMD Ryzen™ PRO 5000 Series desktop processors offer the advanced technology needed to maximize performance for professional applications and collaboration tools essential to business productivity. These powerful desktop processors offer speed and responsiveness to enable power-efficient, cool, and quiet business PCs.

AMD RYZEN PRO 5000 SERIES DESKTOP SPECIFICATIONS						
PROCESSOR	CORES/ THREADS	BOOST GD-150 /BASE FREQUENCY (GHz)	L2+L3 CACHE (MB)	AMD RADEON™ GRAPHICS	TDP	INTEL GD-75 COMPARISON
PRO 5750G	8/16	Up to 4.6/3.8	20	√	65W	Core i7-11700
PRO 5650G	6/12	Up to 4.4/3.9	19	√	65W	Core i5-11600
PRO 5350G	4/8	Up to 4.2/4.0	10	√	65W	Core i3-10300
PRO 5750GE	8/16	Up to 4.6/3.2	20	√	35W	Core i7-11700T
PRO 5650GE	6/12	Up to 4.4/3.4	19	√	35W	Core i5-11600T
PRO 5350GE	4/8	Up to 4.2/3.6	10	√	35W	Core i3-10300T

PERFORMANCE FOR BUSINESS APPLICATIONS CPD-10



BUILT FOR SPEED

- Up to 8 high-performance cores for fast collaboration and productivity
- Exceptional power efficiency through advanced 7nm processor technology
- Power efficiency with 65W (G-series) and 35W (GE-series) TDP
- Micro, SFF, and Mini designs that save desk space without sacrificing performance

POWERHOUSE PERFORMANCE

- Exceptional single-threaded and multi-threaded performance to tackle the full spectrum of professional application compute requirements

EASY TO MANAGE

Our simplified deployment and management model:

- Helps reduce PC administration and maintenance
- Offers support for modern endpoint tools
- Enables support for a remote workforce
- Helps keep IT ecosystems secure

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AMD Ryzen™ PRO: Engaging Customers

STARTING CONVERSATIONS

Battery life is important to me.

AMD offers industry-leading battery life, up to 29 hours of battery life on a premium business laptop (Ryzen 7 PRO 6850U powered HP EliteBook 865 G9). RMP-39. AMD offers up to 45% longer battery life for teams conferencing (compared to Intel Core i7-1260P). RMP-32

I've always used Intel, why should I now switch to AMD?

AMD Ryzen PRO processors set a new standard, delivering the fastest and most power-efficient CPUs featured on premium business notebooks and desktops. RNP-13 Employees can work quickly with powerful and long battery life, and ITDM's can easily manage and secure the PC fleet with AMD PRO technologies.

I need state-of-the-art security features and manageability for PCs.

AMD Ryzen PRO processors feature AMD PRO technologies, a complete set of features that are essential for the modern business. ITDM can take advantage of its cutting-edge security features, robust manageability tools, and enterprise-grade stability and reliability. AMD Ryzen processors with PRO technologies provide you the confidence that your PC will perform quickly and reliably, for the ultimate business experience.

Performance really matters to me.

Ryzen™ PRO 7000 Series mobile processors lead the pack with:

- Up to 70% faster application performance PHXP-24
- Up to 15% less power consumption PHXP-24
- Up to 29% better performance/Watt PHXP-24

Ryzen™ PRO 6000 Series mobile processors deliver:

- Up to 1.3x faster CPU performance RMP-11
- Up to 29 hours of video playback GD-168
- Up to 15% faster overall performance across a range of industry-standard office productivity benchmarks RMP-30
- Up To 17% faster performance using Microsoft Office applications while running a video conference RMP-31

Ryzen™ PRO 5000 Series mobile processors deliver:

- Up to 65% faster multi-thread performance than the competition CZP-34
- Up to 23% faster Microsoft Excel performance CZP-16
- Up to 50% faster image rendering CZP-21

HANDLING OBJECTIONS

I've heard that AMD system run hot and loud.

Advanced AMD fabrication technology enables cool, quiet operation. Ryzen PRO Series uses optimized 7nm, 6nm, or 4nm process nodes, for an efficient design and lower inherent power consumption to increase performance and battery life compared to larger process nodes.

I've heard AMD doesn't have commercial features (Intel vPro).

AMD PRO technologies offer reliability, manageability, and security features for commercial environments. AMD PRO manageability offers open-standards and industry-backed solutions comparable to Intel vPRO on AMD PRO processors (includes AMD KVM for BIOS). Multilayered security features include memory encryption with AMD Memory Guard.

I've heard AMD systems are hard to image and hard to manage.

AMD-based systems are no more complex to manage. Customers can deploy an AMD-based image in roughly the same amount of time and the same number of steps as Intel equal time. Read the whitepaper.

Open-standards-based, CPU-agnostic features in our CPUs help simplify deployment and management: support for asset inventory, KVM, remote firmware updates, and Microsoft Endpoint Manager. Wireless support for 32+ widely used DASH profiles and a dedicated AMD Manageability Processor enhance wireless manageability.

Intel processors have had security issues. How secure are AMD's CPUs?

AMD Ryzen PRO processors can help resist many security threats, including those posed by cold boot memory attacks, side channel attacks, and return-oriented programming (ROP) attacks. Security features such as AMD Shadow Stack, AMD Memory Guard, AMD Secure Processor, and integration with Microsoft Pluton security processor are designed to help protect against these sophisticated attacks.

Do AMD Ryzen PRO processors help protect against security threats?

AMD PRO security makes it easy to stay ahead of security threats with features at the hardware, OS, and system level. AMD recommends following best practices: keep operating systems up-to-date, use the latest versions of platform software (BIOS, BMC/ TSM, FW, etc), use safe computer practices, and run antivirus software.

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AMD RYZEN™ PRO: RESOURCES

AMD ARENA TRAINING MODULES

- AMD Arena
- Introducing AMD Ryzen PRO 7000 Series
- Introducing AMD Ryzen PRO 6000 Series
- 2022 AMD PRO Technologies Overview
- AMD Ryzen PRO 6000 Series: Leadership Performance for Premium Business Laptops
- AMD Ryzen AI + Microsoft Copilot: Transforming Business Productivity
- Mobile Workstations Featuring AMD Ryzen PRO 7040 Series Processors

SALES TOOLS: PROCESSOR BATTLECARDS

- AMD Ryzen PRO 7000 Series Processors with Radeon Graphics
- AMD Ryzen PRO 7030 Battlecard
- AMD RYZEN PRO 7040 SERIES PROCESSORS FOR BUSINESS LAPTOPS
- AMD Ryzen PRO 7040U Series
- AMD Ryzen PRO 7040 Series Processors for Business Laptops
- AMD Ryzen PRO 6000 Series
- AMD Ryzen PRO 6000 Series Mobile Processor
- AMD Ryzen 6000 Series For Business (non-PRO)
- AMD Ryzen 7 PRO 6850U vs 12th Gen Intel Core i7-1260P
- AMD Ryzen 5 6650U vs 12th Gen Core i5-1240P

SALES TOOLS: QUICK REFERENCE GUIDES

- Ryzen PRO 6000 Series
- AMD Ryzen and Athlon Processors for Commercial Chromebooks 2022

OEM SYSTEMS: HOW-TO-SELL GUIDES

- HP ProBook 445 Powered By AMD Ryzen PRO 5000 Series
- HP EliteBook 645 Series G9 Powered by AMD Ryzen PRO 5000 Series
- HP EliteBook 655 Series G9 Powered by AMD Ryzen PRO 5000 Series
- Lenovo ThinkPad L14 Powered by AMD Ryzen PRO 5000 Series

TECHNICAL GUIDES

- 2022 AMD Ryzen 6000 Series PRO Technologies

- AMD PRO Manageability - Ryzen PRO 6000 Series Update
- AMD PRO Security - Ryzen PRO 6000 Series Update
- AMD Ryzen PRO 7000 Series Security White Paper
- Qualcomm Fastconnect 6900 WI-FI 6E (Solution Guide)

PRESENTATIONS

- AMD Ryzen PRO 7000 Series Processors (Press Deck)
- AMD Ryzen 7 PRO 6850U Processor (Competitive Performance)
- AMD Ryzen 5 PRO 6650U Processor (Competitive Performance)
- Lenovo ThinkPad L14 Powered by AMD Ryzen PRO 5000 Series (Product Deck)
- AMD Ryzen PRO 6000 Series Processors (Press Deck)
- AMD Ryzen 5000 & 6000 Series Processors for Business (Channel Presentation Deck)
- HP EliteBook 835 G10 Powered by AMD Ryzen PRO 7040 Series Processors (Product Deck)
- HP EliteBook 645 G10 Powered by AMD Ryzen PRO 7030 Series Processors (Product Deck)

ARTICLES

- The New Standard for Notebooks
- 5 Reasons to Put Your Old PCs Out to Pasture
- Top Device Considerations for Remote Workers
- Build for the Real World: Supercharge Your Next Refresh with AMD
- Threats Are Going Deeper. Your Protection Should Too
- Solving for the Impossible: AMD Delivers Uncompromising Performance and Battery Life
- Elevating Business Computing Everywhere
- HP Laptops: Made for a New Era of Mobility
- Lenovo's Next-Generation Laptop for the Modern Professional

THOUGHT LEADERSHIP PAPERS

- AMD Thunderbolt Docking for HP
- AMD Thunderbolt Docking for Lenovo
- AMD Memory Guard
- AMD Ryzen PRO Processors Ease Headaches for IT Pros
- Evaluating the Performance of Modern Business PCs
- Full-Stack, Multilayered Security Features for a Changing World
- Commercial Client Image Deployment Study (Lenovo)
- Evaluating Performance of Modern Business PCs
- What Really Matters When It Comes to PC Management

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DISCLOSURES

BCLR-02: Testing as of 12/10/2021 by AMD Performance Labs using Cinebench R23 nT, GeekBench v5 multi-core, PassMark 10, PCMark 10 Bencmark, PCMark 10. System configuration for Intel Core i7-1265U: HP EliteBook 840 G9, Intel Iris Xe Graphics, 2X16 GBytes RAM (DDR5-4800), 512GB SSD, Windows 11 Pro, BIOS U71 Ver. 01.02.11. System configuration for Ryzen 7 PRO 7730U: Celadon-BRC reference board, 8GB (2x4GB) 3200MHz RAM, Samsung 980 Pro 1TB NVMe, AMD Radeon Graphics (version 31.0.12020.1), BIOS RRM1006B, Windows 11 Pro. PC manufacturers may vary configurations yielding different results. Results may vary.

CPD-10: Testing as of 4/12/2021 by AMD Performance Labs utilizing a system with a Core i7-11700 processor, Intel® UHD Graphics 750, 16GB RAM - 3200, Samsung 970 Pro Drive with Win Pro vs. Reference Design Board with an AMD Ryzen™ 7 5750G processor, Radeon™ Graphics, 16GB RAM - 3200, Samsung 970 Pro Drive with Win Pro Using the following tests: CineBench R20 1-thread, CineBench R20 n-thread, Passmark 10 CPU Mark, PCMark® 10 Benchmark, PCMark® 10 Productivity Test Group , PCMark® 10 Digital Content Creation Test Group, PCMark® 10 Gimp Cold App Startup (TTC) seconds, Puget Photoshop Overall Score, Puget Photoshop General Score, 7zip TotalRating-(MIPS), Blender Bench CPU-ClassRoom (TTC)-sec. PC manufacturers may vary configurations yielding different results. Results may vary. PCMark® is a registered trademark of Futuremark Corporation.

CZM-26: As of December 2020, the Ryzen 5000 series mobile processors are the “Most advanced/powerful mobile processors,” defined as the highest-performing single-thread and multi-thread performance available on x86 mobile processors enabled by superior 7nm manufacturing technology on a small node.

CZM-38: Testing by AMD Performance Labs as of 12/30/2020 using PCMark 10, PCMark Apps (APP Performance Overall), Word, Excel, PowerPoint, Edge to measure the productivity performance of a Ryzen 7 4800U vs. Core i7-1165G7; a Ryzen 7 5800U vs. Core i7-1165G7 and 4800U; a Ryzen 5 5600U vs Core i5-113G57; and a Ryzen 3 5400U vs. Core i3-1115G4. Results may vary. PC Mark is a registered trademark of Futuremark Corporation.

CZP-16: Testing as of 12/8/2020 by AMD Performance Labs utilizing an MSI Prestige 14 Evo with an Intel® Core i7-1185G7 processor @ 28W TDP, Intel® Iris® Xe Graphics, 16 GBytesAM - 4267 MHz, Kingston Technology SSD Drive with Win Pro vs. AMD Reference Design with an AMD Ryzen™ 7 PRO 5850U mobile processor @ 15W TDP, ATI/AMD Ryzen™ PRO 5000 Series - Internal GPU, 16GB LPDDR4 RAM - 4266, Samsung 970 Pro 512GB Drive with Win Pro, using the following tests: PCMark® 10 Benchmark, PCMark® 10 Gimp Cold App Startup (seconds), PCMark® 10 APP Performance Overall, PCMark® 10 App Performance Word, PCMark® 10 App Performance Excel, PCMark® 10 App Performance PowerPoint, PCMark® 10 App Performance Edge. PC manufacturers may vary configurations yielding different results. Results may vary. PCMark is a registered trademark of Futuremark Corporation.

CZP-21: Testing as of 12/8/2020 by AMD Performance Labs utilizing MSI Prestige 14 Evo with Intel® Core i7-1185G7 processor @ 28W TDP, Intel Xe Graphics, 16 GBytes RAM - 4267 MHz, Kingston Technology SSD Drive with Win Pro vs. AMD Reference Design with Ryzen 7 PRO 5850U mobile processor, 15W TDP, ATI/AMD Ryzen PRO 5000 Series - Internal GPU , 16GB LPDDR4 RAM - 4266, Samsung 970 Pro 512GB Drive with Win Pro, Using the following tests: Adobe Premiere Pro, LAME MP3, POVRay nT, Blender BMW27 CPU, PCMark 10 Digital Content Creation. PC manufacturers may vary configurations yielding different results. Results may vary . PCMark® is a registered trademark of Futuremark Corporation.

CZP-24: Testing as of 02/02/21 utilizing an MSI Prestige 14 Evo with Intel® Core i7-1185G7 processor, Intel Xe Graphics, 16 GBytes 4267 MHz RAM, Kingston Technology SSD Drive, and Windows 10 Pro vs. a Lenovo ThinkPad L14 Gen 2 with Ryzen 7 PRO 5850U mobile processor, AMD Radeon Graphics, 2X16 GB 3200 MHz RAM, Western Digital SN730 NVMe SSD, and Windows 10 Pro with the PCMark 10 Applications test while running a 49 participant Zoom call. PC manufacturers may vary configurations yielding different results.

CZP-28: Testing as of 12/8/2020 by AMD Performance Labs utilizing Dell-XPS-13-9310_2-in-1 with Intel® Core i7-1165G7 processor, Intel(R) Iris(R) Xe Graphics, 16 GBytes RAM - 4267 MHz, KBG40ZPZ1T02 NVMe KIOXIA 1024GB Drive with Win Pro vs. AMD Reference design with a Ryzen 7 PRO 5850U processor, Radeon integrated graphics, 16GB LPDDR4 RAM - 4266, Samsung 970 Pro 512GB Drive with Win Pro, using the following tests: CineBench R20 1-thread, CineBench R20 n-thread, Geekbench v5 (5.3.1) Multi-Core Score (64-bit), Passmark 10 CPU Mark, PCMark® 10 Benchmark, PCMark® 10 APP Performance Overall. PC manufacturers may vary configurations yielding different results. Results may vary. PCMark® is a registered trademark of Futuremark Corporation.

CZP-29: Testing as of 12/8/2020 by AMD Performance Labs utilizing DELL XPS 13 9310 with Intel® Core i5-1135G7 processor, Intel(R) Iris(R) Xe Graphics, 16 GBytes RAM - 4267 MHz, Micron 2300 NVMe 512GB Drive with Win Pro vs. AMD Reference design with Ryzen 5 PRO 5650U processor, Radeon integrated graphics, 16GB LPDDR4 RAM - 4266, Samsung 970 Pro 512GB Drive with Win Pro, using the following tests: CineBench R20 1-thread, CineBench R20 n-thread, Geekbench v5 (5.3.1) Multi-Core Score (64-bit), Passmark 10 CPU Mark, PCMark® 10 Benchmark, PCMark® 10 APP Performance Overall. PC manufacturers may vary configurations yielding different results. Results may vary. PCMark® is a registered trademark of Futuremark Corporation.

CZP-34: Testing as of 2/24/2021 by AMD Performance Labs utilizing a Dell Latitude 5420 with an Intel® Core i7-1185G7 processor, Intel® Iris® Xe Graphics, 32 GBytes RAM - 3200 MHz, PC711 NVMe SK Hynix 512GB Drive with Win Pro vs. AMD Reference Design with AMD Ryzen™ 7 PRO 5850U processor, ATI/AMD Cezanne - Internal GPU, 16GB LPDDR4 RAM - 4266, Samsung 970 Pro 512GB Drive with Win Pro, using the CineBench R20 n-thread benchmark to measure multi-thread performance. PC manufacturers may vary configurations yielding different results. Results may vary.

CZP-64: Testing by AMD Performance Labs as of 1/10/22 utilizing an AMD Reference system with a Ryzen™ 7 5825U processor, a Majolica CRB motherboard, Cezanne 15W thermal solution 16GB LPDDR4-4266, Samsung 970 Pro m.2 SSD 512GB, Integrated Radeon graphics, Windows 11 Pro build 22000.282 vs. Dell Latitude 5420 with an Intel Core i7 1185G7, 28W thermal solution, 32GB LPDDR4-3200, Samsung 980 Pro m.2 SSD 1TB, Intel Iris Xe Graphics, Windows 11 Pro build 22000.282, using the following tests: CineBench R15 1-thread, CineBench R20 n-thread, Geekbench v5 (5.3.1) Multi-Core Score (64-bit), Passmark 10 CPU Mark, PCMark® 10 Benchmark, PCMark® 10 APP Performance Excel. PC manufacturers may vary configurations yielding different results. Results may vary. PCMark® is a registered trademark of Futuremark Corporation.

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CZP-65: Testing by AMD Performance Labs as of 1/10/22 utilizing an AMD Reference system with a Ryzen™ 5 5625U processor, a Majolica CRB motherboard, Cezanne 15W thermal solution 16GB LPDDR4-4266, Samsung 970 Pro m.2 SSD 512GB, Integrated Radeon graphics, Windows 11 Pro build 22000.282 vs. Dell Latitude 5420 with an Intel Core i5 1145G7, 28W thermal solution, 32GB LPDDR4-3200, Samsung 980 Pro m.2 SSD 1TB, Intel Iris Xe Graphics, Windows 11 Pro build 22000.282, using the following tests: CineBench R15 1-thread, CineBench R20 n-thread, Geekbench v5 (5.3.1) Multi-Core Score (64-bit), Passmark 10 CPU Mark, PCMark® 10 Benchmark, PCMark® 10 APP Performance Excel. PC manufacturers may vary configurations yielding different results. Results may vary. PCMark® is a registered trademark of Futuremark Corporation.

GD-75: This chart illustrates competitive product positioning, is not necessarily an indication of relative performance and may not be to scale for any performance metric.

GD-149: Wi-Fi 6 availability varies by laptop manufacturer and is system configuration dependent. Check with your laptop manufacturer for compatibility information.

GD-150: Max boost for AMD Ryzen and Athlon processors is the maximum frequency achievable by a single core on the processor running a bursty single-threaded workload. Max boost will vary based on several factors, including, but not limited to: thermal paste; system cooling; motherboard design and BIOS; the latest AMD chipset driver; and the latest OS updates.

GD-168: All battery life claims are approximate. Battery life tested by HP using MobileMark 18 testing the HP ProBook 445 14” G9 Notebook PC with 51 Whr battery, Ryzen™ 7 5825 U processor. Actual battery life will vary based on several factors, including, but not limited to: product configuration and usage, software, operating conditions, wireless functionality, power management settings, screen brightness and other factors. The maximum capacity of the battery will naturally decrease with time and use. AMD has not independently tested or verified the battery life claim. For more information about the MobileMark 18 benchmark test, see http://www.bapco.com, https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c07949015&search=445%20g9.

GD-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.

GD-182: This claim has not been independently verified by AMD.

GD-193: AMD Manageability Processor requires OEM enablement. Check with the system manufacturer prior to purchase.

GD-204: “Technical Computing” or “Technical Computing Workloads” as defined by AMD can include: electronic design automation, computational fluid dynamics, finite element analysis, seismic tomography, weather forecasting, quantum mechanics, climate research, molecular modeling, or similar workloads.

PHXP-27: Testing as of 5/31/23 by BOXX Technologies, comissioned by AMD, utilizing Dell Latitude 5440 with Intel Core i7 1355U processor, with Intel Integrated graphics, 16GB RAM 512GB NVMe SSD and Windows 11 Pro, Dell Latitude 5440 with Intel Core i7 1370P processor, Intel Integrated graphics, 16GB RAM, 256GB NVMe SSD and Windows 11 Pro, Dell XPS 13+ with Intel Core i7 1360P processor, Intel Integrated graphics, 16GB RAM, 512GB NVMe SSD and Windows 11 Pro, Dell Latitude 5440 with Intel Core i7 1365U processor, Intel Integrated graphics, 16GB RAM, 512GB NVMe SSD, Windows 11 Pro, HP EliteBook 845 G10 with Ryzen PRO R7-7840UU processor, Integrated Radeon Graphics, 16GB RAM 1TB NVMe SSD, Windows 11 Pro. Using the following tests: Geekbench v5 Single core, Passmark 11 CPU Mark, and PCMark 10 benchmark. PC manufacturers may vary configurations yielding different results. Results may vary . PCMark® is a registered trademark of Futuremark Corporation.

PHXP-24: Testing as of 6/2/23 by AMD internal performance lab. System configuration for AMD Ryzen PRO 7840U: Lenovo ThinkPad T14s Gen 4, 32GB RAM, 2TB NVMe SSD, Integrated Radeon graphics, Windows 11 Pro running in Power Efficiency mode. System configuration for Intel Core i7 1370P: Dell Latitude 5440, 16GB RAM, 512GB NVMe SSD, intel integrated graphics, Windows 11 Pro running in Power Efficiency mode using the following tests: Teams + Procyon Overall, Teams + Procyon Word, Teams + Procyon Excel, Teams + Procyon Powerpoint, and Microsoft Teams + Procyon Wallpower consumed (watts). Each Microsoft Teams call consists of 9 participants (3X3) while running each individual benchmark. Laptop manufactures may vary configurations yielding different results.

PHXP-28: Testing as of 5/31/23 by BOXX Technologies, comissioned by AMD, utilizing Dell Latitude 5440 with Intel Core i7 1355U processor, with Intel Integrated graphics, 16GB RAM 512GB NVMe SSD and Windows 11 Pro, Dell Latitude 5440 with Intel Core i7 1370P processor, Intel Integrated graphics, 16GB RAM, 256GB NVMe SSD and Windows 11 Pro, Dell XPS 13+ with Intel Core i7 1360P processor, Intel Integrated graphics, 16GB RAM, 512GB NVMe SSD and Windows 11 Pro, Dell Latitude 5440 with Intel Core i7 1365U processor, Intel Integrated graphics, 16GB RAM, 512GB NVMe SSD, Windows 11 Pro, HP EliteBook 845 G10 with Ryzen PRO R7-7840UU processor, Integrated Radeon Graphics, 16GB RAM 1TB NVMe SSD, Windows 11 Pro. Using the following tests: Geekbench v5 Single Core, Passmark 11 CPU Mark and PCMark 10 Benchmark. PC manufacturers may vary configurations yielding different results. Results may vary . PCMark® is a registered trademark of Futuremark Corporation.

R5K-004: Testing by AMD performance labs as of 09/01/2020 with a Ryzen 9 5950X processor vs a Core i9-10900K configured with NVIDIA GeForce GTX 2080 Ti graphics, Samsung 970 Pro SSD, 2X8 DDR4-3600, Windows 10 and a Noctua NH-D15s cooler. Single-core performance evaluated with Cinebench R20 1T benchmark. Results may vary.

RM3-05: Demonstrated by Ryzen 7 4800 series mobile processor having 8 cores, while comparable competitive product (Intel 10th generation mobile processors) offer up to 6 cores.

RM3-123: Testing by AMD Performance Labs as of 11/22/2019 utilizing the Ryzen 7 4800U vs. 2nd Gen Ryzen 7 3700U in Cinebench R20Benchmark. Results may vary.

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.

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RMP-11: Based on testing by AMD as of 12/14/2021. CPU performance evaluated with an average of seven multithreaded content creation an d CPU tests. GPU performance evaluated with an average of six 3DMark® GPU tests. System configuration for Ryzen ™7 5850U CPU/GPU performance: HP ProBook 635 Aero G8 configured with 2x8GB DDR4 3200 (22 22 22), Windows® 11 Professional build 22000.282, Samsung 980 Pro 1TB SSD, 15W nominal pr ocessor TDP, GPU driver 27.20.21026, BIOS T83. System configuration for Ryzen ™7 PRO 6850U CPU/GPU performance: AMD reference motherboard configured with 4x4GB LPDDR5 6400 (40 39 45 90), Windows® 11 Professional v22000.282, Samsung 980 Pro 1TB SSD, 28W nominal processor TDP, AMD Radeon TM 680M graphics, GPU driver 30.0, BIOS TRM0081D. Performance may vary.

RMP-12: Based on testing by AMD as of 12/14/2021. CPU performance evaluated with an average of seven multi-threaded content creation and CPU tests. GPU performance evaluated with an average of six 3DMark® GPU tests. System configuration for Intel® Core™ i7-1185G7 CPU/GPU performance: Dell Latitude 5420 configured with 2x16GB DDR4-3200, Windows® 11 Professional build 22000.318, Samsung 980 Pro 1TB SSD, 28W nominal processor TDP, Intel Iris Xe Graphics. System configuration for Ryzen™ 7 PRO 6850U CPU/GPU performance: AMD reference motherboard configured with 4x4GB LPDDR5-6400 (40-39-45-90), Windows® 11 Professional build 22000.282, Samsung 980 Pro 1TB SSD, 28W nominal processor TDP, AMD Radeon™ 680M graphics, GPU driver 30.0, BIOS TRM0081D. Performance may vary.

RMP-27: Testing as of 4/1/22 by AMD Performance Labs using Cinebench R20, 3DMark Time Spy, and PassMark 10 benchmark tests. System configuration for Intel Core i7 1260P: Lenovo ThinkPad X1 Carbon, Intel Iris Xe Graphics, 2X8 GB RAM (LPDDR5 5500), 1TB SSD, BIOS version N3AET45W (1. 10), Windows 11 Pro. System configuration for Ryzen ™7 PRO 6860Z: Lenovo ThinkPad Z13, 2x16GB LPDDR5 6400, Windows 11 Pro, 1TB SSD, AMD Radeon 680M graphics, GPU driver 30.0, BIOS N3GET12WE (0.12). PC manufacturers may vary configurations yielding different results. Results may vary.

RMP-28: Testing as of 4/1/22 by AMD Performance Labs using UL Procyon Office Productivity, PCMark 10 Benchmark, PCMark 10 Extended, and PCMark 10 Productivity test group. System configuration for Intel Core i7 1260P: Lenovo ThinkPad X1 Carbon, Intel Iris Xe Graphics, 2X8 GBytes RAM (LPDDR5 5500), 1TB SSD, BIOS version N3AET45W (1.10), Windows 11 Pro. System configuration for Ryzen ™7 PRO 6860Z: Lenovo ThinkPad Z13, 2x16GB LPDDR5 6400, Windows 11 Pro, 1TB SSD, AMD Radeon 680M graphics, GPU driver 30.0, BIOS N3GET12WE (0.12). PC manufacturers may vary configurations yielding different results. Results may vary.

RMP-30: Based on testing by AMD as of 4/1/22. Office productivity performance evaluated with a geometric mean of five general productivity and Microsoft Office application tests. System configuration for Intel® Core ™i7 1260P CPU/GPU performance: Lenovo ThinkPad X1 Carbon, Intel Iris Xe Graphics, 2X8 GBytes RAM (LPDDR5 5500), 1TB SSD, BIOS version N3AET45W (1.10), Windows 11 Pro. System configuration for Ryzen ™7 PRO 6860Z: Lenovo ThinkPad Z13, 2x16GB LPDDR5 6400, Windows 11 Pro, 1TB SSD, AMD Radeon™ 680M graphics, GPU driver 30.0, BIOS N3GET12WE (0.12). The geometric mean score is a mean or average, which indicates the typical value of the benchmark results by using the nth root of the product of the test results . Performance may vary.

RMP-31: Based on testing by AMD as of 4/1/22. Productivity performance evaluated with simultaneous operation of nine participant Microsoft Teams video conferences using the UL Procyon Office Productivity benchmark. System configuration for Intel® Core ™i7 1260P CPU/GPU performance: Lenovo ThinkPad X1 Carbon, Intel Iris Xe Graphics, 2X8 GBytes RAM (LPDDR5 5500), 1TB SSD, BIOS version N3AET45W (1.10), Windows 11 Pro. System configuration for Ryzen ™7 PRO 6860Z: Lenovo ThinkPad Z13, 2x16GB LPDDR5 6400, Windows 11 Pro, 1TB SSD, AMD Radeon 680M graphics, GPU driver 30.0, BIOS N3GET12WE (0.12). Performance may vary.

RMP-32: Based on testing by AMD as of 4/1/22. Battery life evaluated in hours using a nine participant Microsoft Teams video conference with camera on, 200 nit brightness, slider position AC#2 (Balanced), with 95% utilization. Battery life results normalized for battery capacity differences. System configuration for Intel® Core ™i7 1260P CPU/GPU performance: Lenovo ThinkPad X1 Carbon, 57 watt hour battery, Intel Iris Xe Graphics, 2X8 GB RAM (LPDDR5 5500), 1TB SSD, BIOS version N3AET45W (1.10), Windows 11 Pro. System configuration for Ryzen ™7 PRO 6860Z: Lenovo ThinkPad Z13, 50 watt hour battery, 2x16GB LPDDR5 6400, Windows 11 Pro, 1TB SSD, AMD Radeon 680M graphics, GPU driver 30. 0, BIOS N3GET12WE (0.12). Actual battery life will vary based on several factors, including, but not limited to: product configuration and usage, software, operating conditions, wireless functionality, power management settings, screen brightness, and other factors. The maximum capacity of the battery will naturally decrease with time and use.

RMP-39: Based on testing by AMD Labs as of 4/11/22. Battery life evaluated in hours of continuous 1080p local video playback with a HP Elitebook 865 G9 configured with an AMD Ryzen 7 PRO 6850U processor with Radeon 680M graphics, 76 WHr battery, 150 nit screen brightness, 256GB HDD, 8GB memory, Win 10 Pro, video resolution of 1920 x 1200 x 60 Hz and the power slider set to “better battery.” Actual battery life will vary based on several factors, including, but not limited to: product configuration and usage, software, operating conditions, wireless functionality, power management settings, screen brightness and other factors. The maximum capacity of the battery will naturally decrease with time and use.

RNP-1: Source: IDC PC Device Tracker data, 2021Q1, AMD has gained the most share among PC processor vendors for x86 processors for consumer and commercial desktops and notebooks from Q2 2017 through Q1 2021.

RNP-4: Testing as of 1/25/2020 by AMD Performance Labs on an AMD Celadon reference board (AMD Ryzen™ 5 4500U) MSI MS-14B3 (Intel Core i5-10210U config. PCMark is a registered trademark of Futuremark Corporation. Results may vary

RNP-6: Testing as of 1/24/2020 by AMD Performance Labs on a Ryzen 7 PRO 4750U Reference Platform vs. Ryzen 7 PRO 3700U (HP EliteBook 745 G6) in the PCMark® 10 App Overall Score benchmark test. PCMark is a registered trademark of Futuremark Corporation. Results may vary.

RNP-8: Testing as of 1/24/2020 by AMD Performance Labs on a Ryzen™ 7 PRO 4750U Reference Platform vs. i7-10710U (Dell XPS 13). PCMark is a registered trademark of Futuremark Corporation. Results may vary.

RNP-13: “Processor for business ultrathin notebooks” defined as 15W typical TDP. Testing as of 1/24/2020 by AMD Performance Labs on a Ryzen 7 PRO 4750U Reference Platform vs. i7-10710U (Dell XPS 13) vs. i7-1065G7 (Dell XPS 7390 2in1) vs. i7-8665U (Lenovo ThinkPad T490s). Results may vary.

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RNP-28: A properly configured HP EliteBook 835 G7 with AMD Ryzen 7 PRO 4750U Processor, gets up to 24 hours of MM14 battery life: https://press.hp.com/us/en/press-releases/2020/hp-provides-ultimate-office-experience-at-home.html Actual battery life will vary based on several factors, including, but not limited to: system configuration and software, settings, product use and age, and operating conditions. AMD has not independently tested or verified the battery life claim. See www.bapco.com for additional details.

PW-382: Testing as of March 23, 2021 by AMD Performance Labs on a test system comprised of an AMD Ryzen™ 9 5950X with AMD Radeon™ PRO W5700 / AMD Radeon™ PRO WX 9100 / AMD Radeon™ PRO W6600 (pre-production sample) / AMD Radeon™ PRO W6800 (pre-production sample), at 3840x2160 display resolution. Benchmark Application: Dassault Systèmes SOLIDWORKS® Visualize 2021 SP3 (ProRender low sample)

ROM-544: Comparison based on best performance system SPECrate®2017_int_base scores with one chip published at www.SPEC.org as of 2/12/20. 1P EPYC 7742 powered server scores a world record result of 355 SPECrate®2017_int_base (http://spec.org/cpu2017/results/res2020q1/cpu2017-20191223-20460.pdf). The next highest published score is 354 SPECrate®2017_int_base on a 1P EPYC 7742 powered server http://spec.org/cpu2017/results/res2019q4/cpu2017-20191209-20297.pdf

RP3-3: Testing as of 09/10/2019 by AMD Performance Labs using the Cinebench R20 nT benchmark test. Results may vary.

RP3-6: Testing as of September 2019 by AMD Performance Labs using an AMD Ryzen™ 9 PRO 3900 and AMD Ryzen™ 7 PRO 3700 with a Radeon™ RX 550 GPU, and Core i7-9700 with a Radeon™ RX 550 GPU in Adobe Premiere Pro Encoding Test, Adobe Photoshop Filter Test Script, and Handbrake transcoding. Results may vary.

RPN-4: Testing as of 1/25/2020 by AMD Performance Labs on an AMD Celadon reference board (AMD Ryzen™ 5 4500U) MSI MS-14B3 (Intel Core i5-10210U config PCMark is a registered trademark of Futuremark Corporation. Results may vary

PW-382: Testing as of March 23, 2021 by AMD Performance Labs on a test system comprised of an AMD Ryzen™ 9 5950X with AMD Radeon™ PRO W5700 / AMD Radeon™ PRO WX 9100 / AMD Radeon™ PRO W6600 (pre-production sample) / AMD Radeon™ PRO W6800 (pre-production sample), at 3840x2160 display resolution. Benchmark Application: Dassault Systèmes SOLIDWORKS® Visualize 2021 SP3 (ProRender low sample)

ROM-544: Comparison based on best performance system SPECrate®2017_int_base scores with one chip published at www.SPEC.org as of 2/12/20. 1P EPYC 7742 powered server scores a world record result of 355 SPECrate®2017_int_base (http://spec.org/cpu2017/results/res2020q1/cpu2017-20191223-20460.pdf). The next highest published score is 354 SPECrate®2017_int_base on a 1P EPYC 7742 powered server http://spec.org/cpu2017/results/res2019q4/cpu2017-20191209-20297.pdf

RP3-3: Testing as of 09/10/2019 by AMD Performance Labs using the Cinebench R20 nT benchmark test. Results may vary.

RP3-6: Testing as of September 2019 by AMD Performance Labs using an AMD Ryzen™ 9 PRO 3900 and AMD Ryzen™ 7 PRO 3700 with a Radeon™ RX 550 GPU, and Core i7-9700 with a Radeon™ RX 550 GPU in Adobe Premiere Pro Encoding Test, Adobe Photoshop Filter Test Script, and Handbrake transcoding. Results may vary.

RPN-4: Testing as of 1/25/2020 by AMD Performance Labs on an AMD Celadon reference board (AMD Ryzen™ 5 4500U) MSI MS-14B3 (Intel Core i5-10210U config PCMark is a registered trademark of Futuremark Corporation. Results may vary

RPW-363: Testing as of March 23, 2021 by AMD Performance Labs on a test system comprised of an AMD Ryzen™ 5950X with AMD Radeon™ PRO W5700, AMD Radeon™ PRO W6800, AMD Radeon™ PRO WX 9100. Benchmark Applications: Lumion v.11 (Museum, Valley Winery, Downtown Development, Glass House, Villa Cabrera, Farnsworth, Residential Home, Beach House), Topaz Video Enhance AI 2.0.0 (Artemis-HQ, Gaia-HQ, Theia-Detail), Dassault Systèmes SOLIDWORKS® Visualize 2021 SP3 (Camaro default angle, Yellow motorcycle, Snowmobile). Performance may vary based on factors such as tasks performed, driver version and hardware configuration.

RPW-370: Testing as of May 8, 2021 by AMD Performance Labs on a test system comprised of an AMD Ryzen™ 7 3700X with AMD Radeon™ PRO W5500 / AMD Radeon™ PRO W5700 / AMD Radeon™ PRO W6600 (pre-production sample) / AMD Radeon™ PRO W6800 (pre-production sample). Benchmark Application: Autodesk® Inventor® 2022 with Radeon ProRender Plugin V1. Performance may vary based on factors including driver version and system configuration.

RPW-373: Testing as of April 15, 2021 by AMD Performance Labs on a test system comprised of an AMD Threadripper PRO 3975WX, with AMD Radeon™ PRO W5700 / AMD Radeon™ PRO WX9100 / AMD Radeon™ PRO W6600 (pre-production sample) / AMD Radeon™ PRO W6800 (pre-production sample) / No GPU (CPU only). Benchmark Application: DxO DeepPRIME. Performance may vary based on factors including driver version and system configuration.

RPW-382: Testing as of March 23, 2021 by AMD Performance Labs on a test system comprised of an AMD Ryzen™ 9 5950X with AMD Radeon™ PRO W5700 / AMD Radeon™ PRO WX 9100 / AMD Radeon™ PRO W6600 (pre-production sample) / AMD Radeon™ PRO W6800 (pre-production sample), at 3840x2160 display resolution. Benchmark Application: Dassault Systèmes SOLIDWORKS® Visualize 2021 SP3 (ProRender low sample) test. Performance may vary based on factors such as driver version and hardware configuration.

RPW-363: Testing as of March 23, 2021 by AMD Performance Labs on a test system comprised of an AMD Ryzen™ 5950X with AMD Radeon™ PRO W5700, AMD Radeon™ PRO W6800, AMD Radeon™ PRO WX 9100. Benchmark Applications: Lumion v.11 (Museum, Valley Winery, Downtown Development, Glass House, Villa Cabrera, Farnsworth, Residential Home, Beach House), Topaz Video Enhance AI 2.0.0 (Artemis-HQ, Gaia-HQ, Theia-Detail), Dassault Systèmes SOLIDWORKS® Visualize 2021 SP3 (Camaro default angle, Yellow motorcycle, Snowmobile). Performance may vary based on factors such as tasks performed, driver version and hardware configuration.

RPW-370: Testing as of May 8, 2021 by AMD Performance Labs on a test system comprised of an AMD Ryzen™ 7 3700X with AMD Radeon™ PRO W5500 / AMD Radeon™ PRO W5700 / AMD Radeon™ PRO W6600 (pre-production sample) / AMD Radeon™ PRO W6800 (pre-production sample). Benchmark Application: Autodesk® Inventor® 2022 with Radeon ProRender Plugin V1. Performance may vary based on factors including driver version and system configuration.

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RPW-373: Testing as of April 15, 2021 by AMD Performance Labs on a test system comprised of an AMD Threadripper PRO 3975WX, with AMD Radeon™ PRO W5700 / AMD Radeon™ PRO WX9100 / AMD Radeon™ PRO W6600 (pre-production sample) / AMD Radeon™ PRO W6800 (pre-production sample) / No GPU (CPU only). Benchmark Application: DxO DeepPRIME. Performance may vary based on factors including driver version and system configuration.

RX-816: Based on AMD labs testing in November 2022, on a system configured with a Radeon RX 7900 XTX GPU, driver 31.0.14000.24040, AMD Ryzen 9 5900X CPU, 32GB DDR4-3200MHz, ROG CROSSHAIR VIII HERO (WI-FI) motherboard, set to 300W TBP, on Win10 Pro, versus a similarly configured test system with a 300W Radeon 6900 XT GPU and driver 31.0.12019.16007, measuring FPS performance in select titles. Performance per watt is calculated using the manufacturers' stated total board power (TBP) of the AMD GPUs listed herein. System manufacturers may vary configurations, yielding different results.

For feedback or more information, contact z1.zenmaster@amd.com

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