



FINANCIAL ANALYST DAY 2020

# DRIVING GROWTH ACROSS PCs AND GAMING

**RICK BERGMAN**

EVP, Computing and Graphics

## CAUTIONARY STATEMENT

This presentation contains forward-looking statements concerning Advanced Micro Devices, Inc. (AMD) such as expectations regarding AMD's PC opportunities; the estimated total addressable markets in PC and gaming; AMD's expectations towards driving sustainable PC growth; AMD's expectations regarding notebook and commercial platform design wins in 2020; AMD's CPU and gaming GPU technology roadmaps; the features, functionality, expectations, benefits, timing and availability of AMD's next generation RDNA 2 GPU architecture; AMD's expectations regarding opportunities in the gaming market; the expected availability of next generation game consoles; and AMD's ability to drive sustainable growth in PC and gaming markets, which are made pursuant to the Safe Harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are commonly identified by words such as "would," "may," "expects," "believes," "plans," "intends," "projects" and other terms with similar meaning. Investors are cautioned that the forward-looking statements in this presentation are based on current beliefs, assumptions and expectations, speak only as of the date of this presentation and involve risks and uncertainties that could cause actual results to differ materially from current expectations. Such statements are subject to certain known and unknown risks and uncertainties, many of which are difficult to predict and generally beyond AMD's control, that could cause actual results and other future events to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. Material factors that could cause actual results to differ materially from current expectations include, without limitation, the following: Intel Corporation's dominance of the microprocessor market and its aggressive business practices; the ability of third party manufacturers to manufacture AMD's products on a timely basis in sufficient quantities and using competitive technologies; expected manufacturing yields for AMD's products; AMD's ability to introduce products on a timely basis with features and performance levels that provide value to its customers while supporting and coinciding with significant industry transitions; AMD's ability to generate sufficient revenue and operating cash flow or obtain external financing for research and development or other strategic investments; the loss of a significant customer; AMD's ability to generate revenue from its semi-custom SoC products; global economic uncertainty; political, legal and economic risks, natural disasters, and public health risks, including the impact of COVID-19; government actions and regulations such as export administration regulations, tariffs and trade protection measures may limit our ability export our products to certain customers; potential security vulnerabilities; potential IT outages, data loss, data breaches and cyber-attacks; the ability of a third party manufacturer to satisfy AMD's manufacturing requirements; uncertainties involving the ordering and shipment of AMD's products; quarterly and seasonal sales patterns; the restrictions imposed by agreements governing AMD's notes and the secured credit facility; the competitive markets in which AMD's products are sold; the potential dilutive effect if the 2.125% Convertible Senior Notes due 2026 are converted; the market conditions of the industries in which AMD products are sold; AMD's reliance on third-party intellectual property to design and introduce new products in a timely manner; AMD's reliance on third-party companies for the design, manufacture and supply of motherboards, software and other computer platform components; AMD's reliance on Microsoft Corporation and other software vendors' support to design and develop software to run on AMD's products; AMD's reliance on third-party distributors and add-in-board partners; future impairments of goodwill and technology license purchases; AMD's ability to attract and retain qualified personnel; AMD's indebtedness; AMD's ability to generate sufficient cash to service its debt obligations or meet its working capital requirements; AMD's ability to repurchase its outstanding debt in the event of a change of control; the cyclical nature of the semiconductor industry; the impact of acquisitions, joint ventures and/or investments on AMD's business; the impact of modification or interruption of AMD's internal business processes and information systems; the availability of essential equipment, materials or manufacturing processes; compatibility of AMD's products with some or all industry-standard software and hardware; costs related to defective products; the efficiency of AMD's supply chain; AMD's ability to rely on third party supply-chain logistics functions; AMD's stock price volatility; worldwide political conditions; unfavorable currency exchange rate fluctuations; AMD's ability to effectively control the sales of its products on the gray market; AMD's ability to adequately protect its technology or other intellectual property; current and future claims and litigation; potential tax liabilities; and environmental laws, conflict minerals-related provisions and other laws or regulations. Investors are urged to review in detail the risks and uncertainties in AMD's Securities and Exchange Commission filings, including but not limited to AMD's Annual Report on Form 10-K for the year ended December 28, 2019.



# DRIVING SUSTAINABLE GROWTH WITH LEADERSHIP PRODUCTS IN THE PC AND GAMING MARKETS

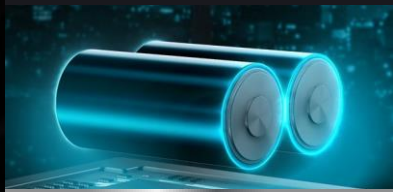


# 1.5 BILLION PC USERS

PERFORMANCE



ENERGY  
EFFICIENCY



UPGRADEABILITY



GAMING



CONTENT  
CREATION



STREAMING



# DRIVING SUSTAINABLE GROWTH

# AMD PC OPPORTUNITY

\$32B TAM

Sizeable  
Market



Innovative  
CPU Core



Top-to-Bottom  
Leadership Product Stack

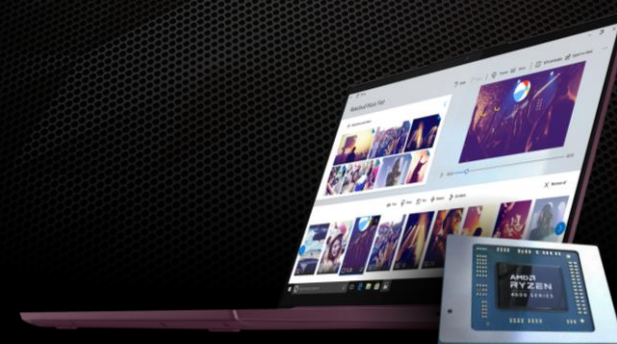
# AMD RYZEN™ PROCESSORS DISRUPTED THE INDUSTRY



WORLD'S FASTEST  
16-Core  
Processor



WORLD'S FASTEST  
High-End  
Desktop Processors



WORLD'S FASTEST  
Ultrathin Notebook  
Processor

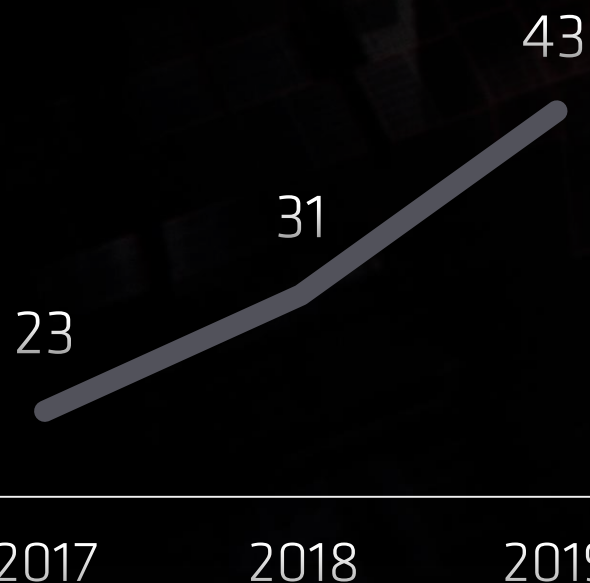


# SIGNIFICANT AMD PC GROWTH

DRIVEN BY 3<sup>RD</sup> GEN RYZEN™ DESKTOP AND 2<sup>ND</sup> GEN RYZEN™ MOBILE

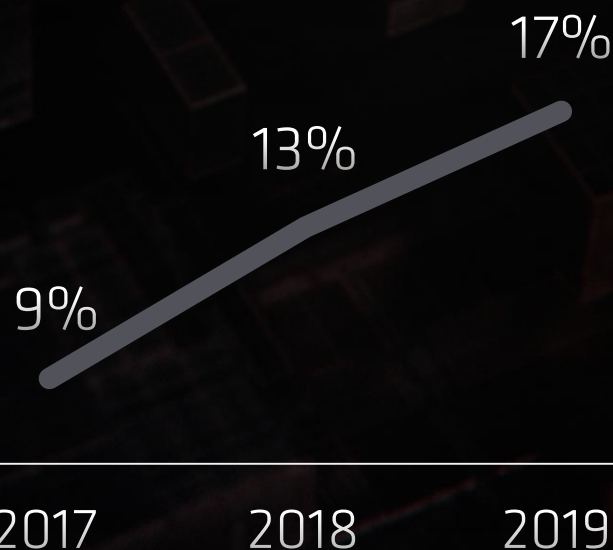
## UNIT SHIPMENT INCREASE

Millions of Units



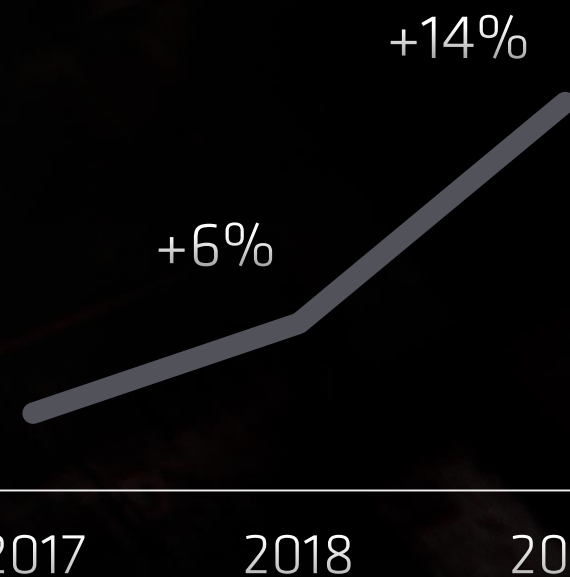
## UNIT MARKET SHARE GROWTH

% Share of Market



## CLIENT CPU ASP GROWTH

% ASP Growth



# OUR PATH FORWARD

# DRIVING SUSTAINABLE PC GROWTH

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Multi-Generational  
Product Leadership

Superior User  
Experience

Notebook  
Acceleration

Commercial  
Momentum



# MULTI-GENERATIONAL PRODUCT LEADERSHIP



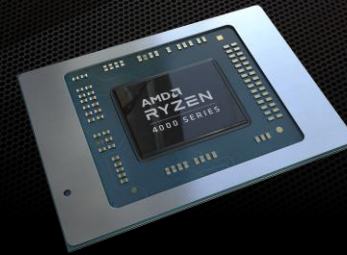
## CPU CORES

Record-Breaking Performance  
for AMD Ryzen™ CPUs



## GPU CORES

Leadership  
Graphics IP



## SYSTEM ON CHIP

Innovative  
SOC Capability



## RADEON™ SOFTWARE

Advanced Performance,  
Features and Stability

# AMD DESKTOP LEADERSHIP

## 7NM "ZEN 2" BASED 3<sup>RD</sup> GEN AMD RYZEN™ PROCESSORS

### AMD RYZEN™ SERIES



THE WORLD'S MOST ADVANCED  
**DESKTOP** PROCESSORS

**PCWorld**

"AMD ascending: How 3<sup>rd</sup> gen Ryzen CPUs snatched the computing crown from Intel."



#1 on "Best Processors of 2020" List

### AMD RYZEN™ THREADRIPPER



THE WORLD'S FASTEST  
**HEDT** PROCESSORS



"AMD's 32-core Ryzen Threadripper 3970X performs so far ahead of the curve that it practically creates a new class of consumer-accessible CPU."

# OPTIMIZING THE USER EXPERIENCE

## ACCELERATING OUR NOTEBOOK BUSINESS



### PRODUCTIVITY

Leadership Architecture Driving the Ultimate in Performance



### RESPONSIVENESS

Quick Startup, Shutdown and Browser Load Time



### BATTERY LIFE

Designed for All-day Battery Life





# 3<sup>RD</sup> GEN AMD RYZEN™ MOBILE PROCESSORS

## WORLD'S HIGHEST-PERFORMING ULTRATHIN NOTEBOOK PROCESSOR

### WORLD'S FIRST

8-Core x86 Processor for  
Ultrathin Notebooks

### THE BEST CPU

"Zen 2" Core with  
15% higher IPC

### THE BEST GRAPHICS

Up to 59% More Performance  
per Graphics CU

### OUTSTANDING BATTERY LIFE

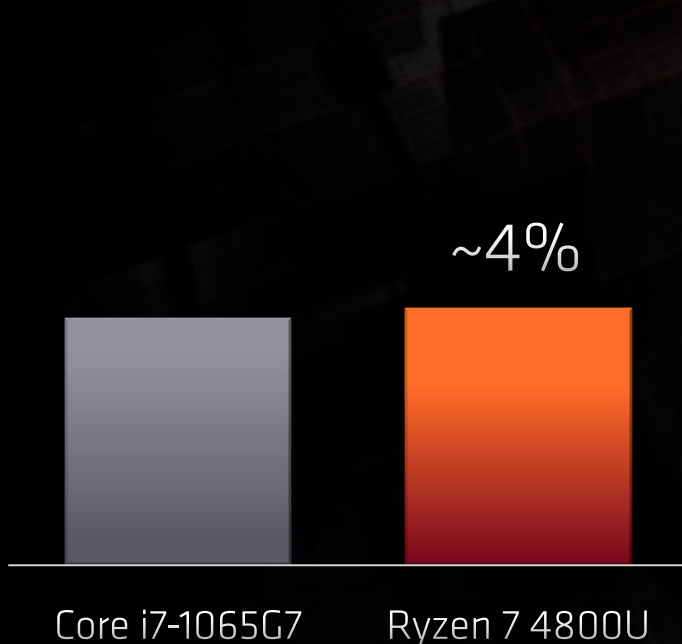
Up to 2x Performance-per-Watt  
vs. Previous Generation

# LEADERSHIP PERFORMANCE IN NOTEBOOKS

## AMD RYZEN™ MOBILE 4000 SERIES

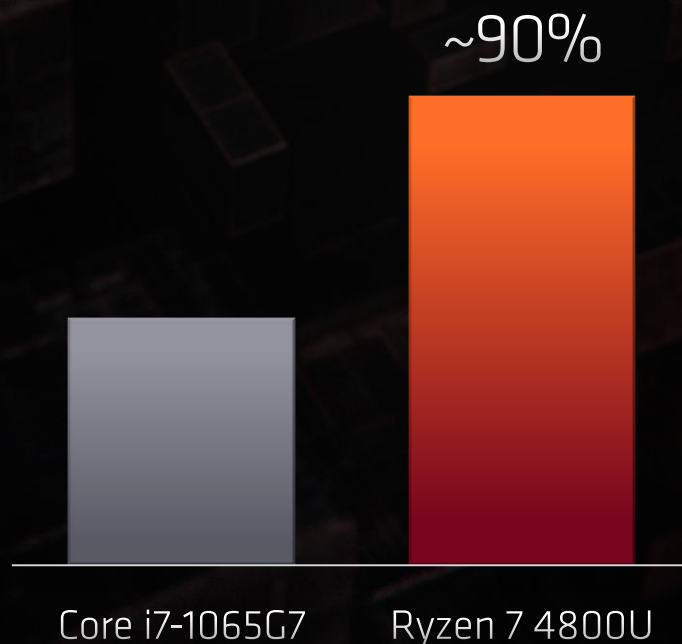
### SINGLE-THREAD PERFORMANCE

Cinebench R20 1T



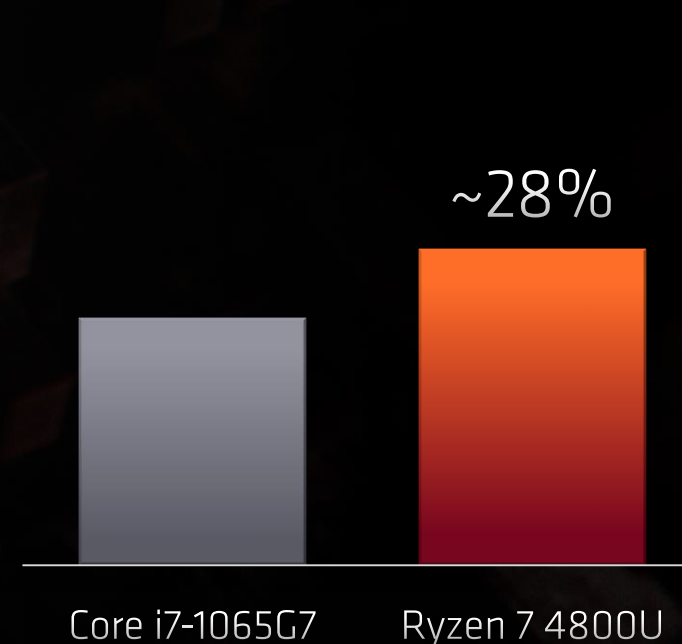
### MULTI-THREAD PERFORMANCE

Cinebench R20 mT



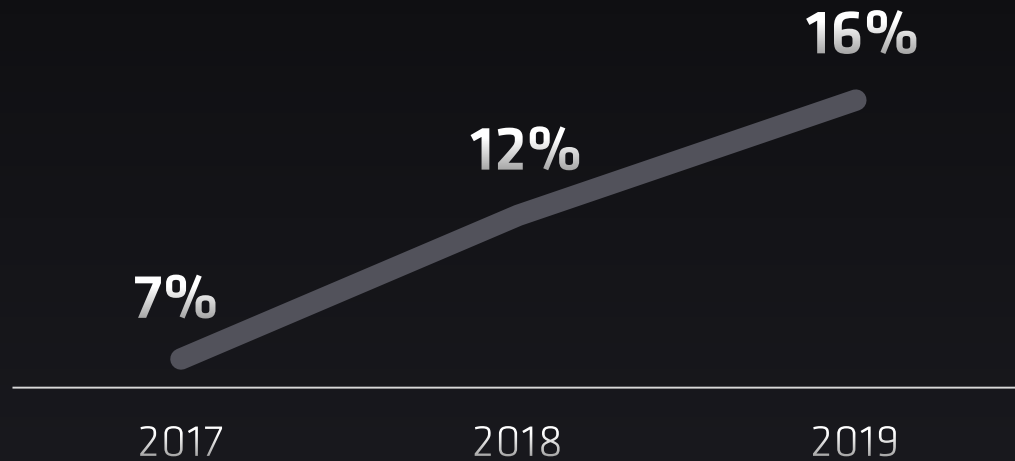
### GRAPHICS PERFORMANCE

3DMark® Time Spy Extreme

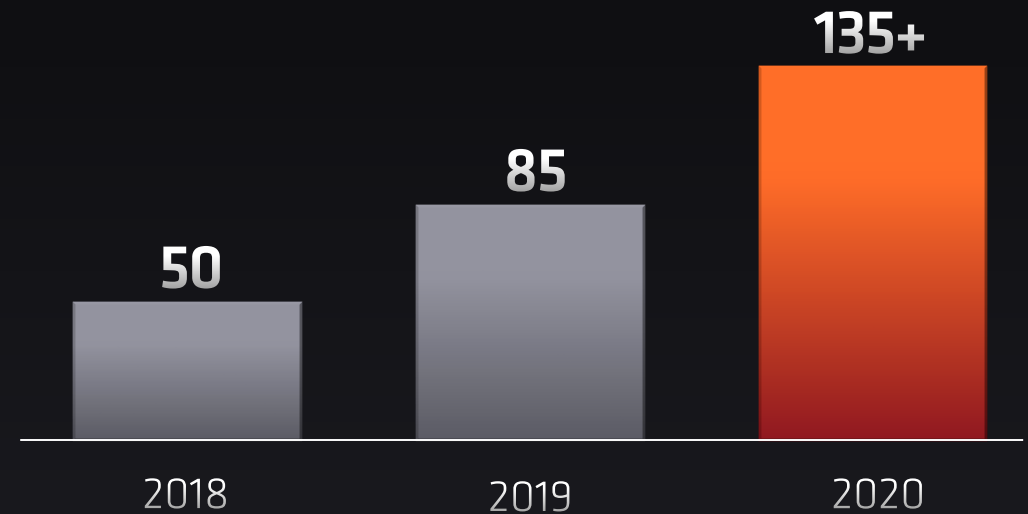


# ACCELERATED NOTEBOOK MOMENTUM

AMD NOTEBOOK UNIT MARKET SHARE



AMD PLATFORM MOMENTUM



acer



ASUS



Lenovo



Microsoft





# AMD RYZEN™ PRO PROCESSORS

THE FASTEST GROWING PROCESSOR BRAND FOR COMMERCIAL PCs

World's Fastest Processor for  
Business Ultrathin Notebooks

Powerful,  
Built-in Security

Designed for All-day  
Battery Life

Features and Flexibility for Modern  
Endpoint Management

# AMD PRO SECURITY

## MODERN SECURITY SOLUTION PROTECTS DATA AND AVOIDS DOWNTIME

### **MODERN ARCHITECTURE**

Designed to Help Address Today's  
More Sophisticated Attacks

### **AMD MEMORY GUARD**

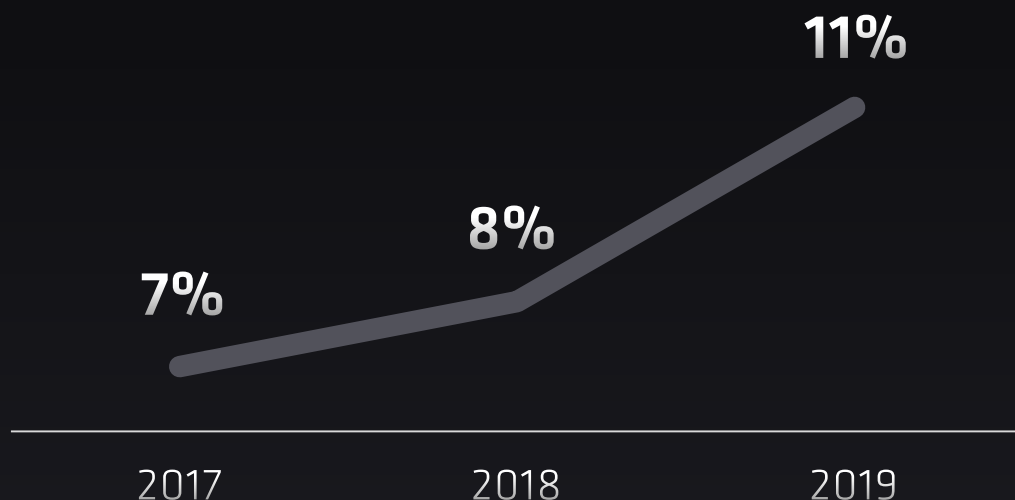
Full Memory Encryption to Help  
Protect Data on Lost or Stolen PCs

### **SECURED-CORE PC**

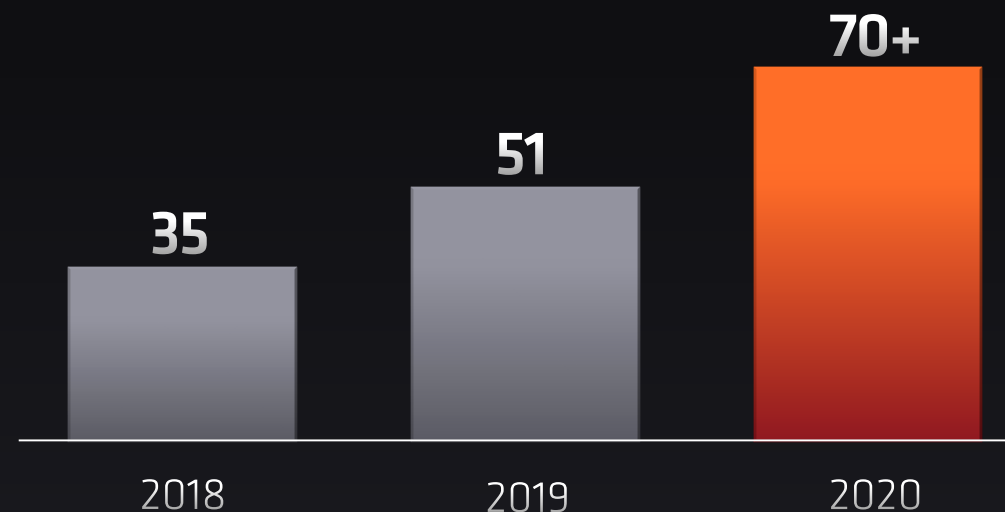
Enabling the Most Modern Security  
Features on Win10 Devices

# STRONG COMMERCIAL MOMENTUM

AMD COMMERCIAL UNIT MARKET SHARE



AMD PLATFORM MOMENTUM

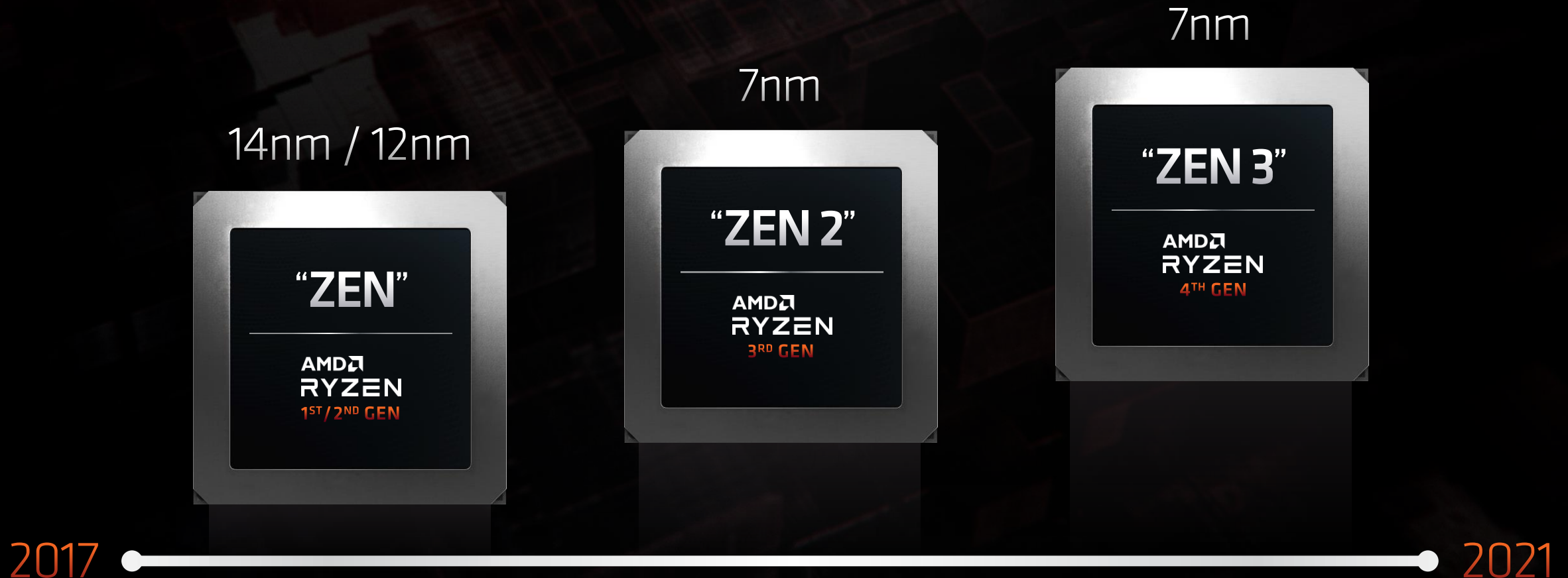


Lenovo



# CPU ROADMAP

SUSTAINED HIGH-PERFORMANCE LEADERSHIP



A person is shown in profile, wearing a headset and looking at a computer monitor. The monitor displays a game interface with the text "Mission objectives" and "Destroy the reactor". The scene is dimly lit, with a warm light source visible in the background. The text "ACCELERATING OUR GROWTH IN GAMING" is overlaid on the image in a large, bold, sans-serif font. "ACCELERATING OUR" and "GROWTH" are in white, while "IN GAMING" is in red.

# ACCELERATING OUR GROWTH **IN GAMING**

# 2.5+ BILLION GAMERS

SOCIAL  
INTERACTION



CONTROL



PERFORMANCE



RESOLUTION



STREAMING



EFFICIENCY





# AMD RADEON™ EVERYWHERE

500M INSTALL BASE AND GROWING



## PCs

AMD Radeon RX  
5000 Series GPUs



## MACs

MacBook Pro, Mac Pro  
and iMac Pro



## CONSOLES

Next-Generation Xbox  
and PlayStation



## CLOUD

Custom GPUs  
for Google Stadia



## MOBILE

Samsung Graphics  
IP Licensing

# OUR PATH FORWARD

## PUSHING THE ENVELOPE FOR GAMERS

**\$12B** TAM

Sizeable  
Market

AMD  
**RDNA**

RDNA  
Architecture



Top-to-Bottom  
Leadership  
Product Stack

AMD  
RADEON  
**Software**

Advanced  
Software

# AMD RADEON™ RX 5000 SERIES

7nm

Process Technology  
Leadership

AMD  
RDNA

UP TO 50%

INCREASED PERFORMANCE-PER-WATT vs. GCN

New Architecture

GDDR6  
Memory

PCIe® 4.0  
Support

AMD  
RADEON  
Media Engine

AMD  
RADEON  
Display Engine

New Features



# AMD RADEON™ RX 5000 SERIES

AMD  
RADEON **RX**  
5600 SERIES



ASRock ASUS GIGABYTE MSI PowerColor SAPPHIRE XFX

AMD  
RADEON **RX**  
5700 SERIES



ASRock ASUS GIGABYTE MSI PowerColor SAPPHIRE XFX

ULTIMATE **1080P** GAMING

AMD RADEON™ RX 5600 SERIES

ULTIMATE **1440P** GAMING

AMD RADEON™ RX 5700 SERIES

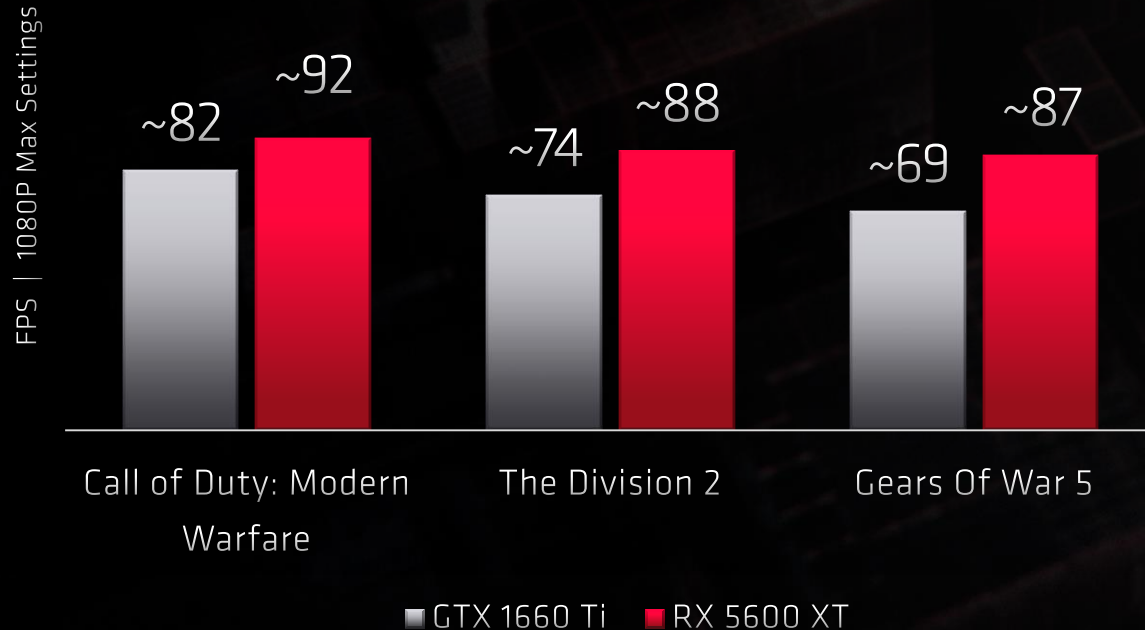


# AMD RADEON™ RX 5000 SERIES

AMD  
RADEON RX

5600 SERIES

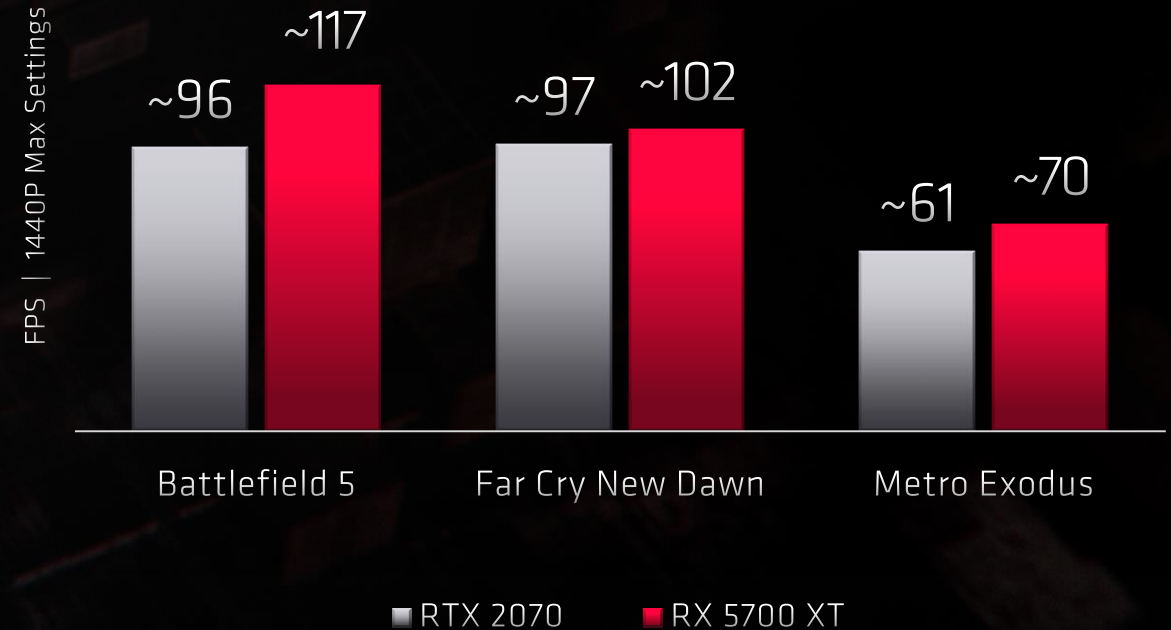
ULTIMATE **1080P AAA** GAMING



AMD  
RADEON RX

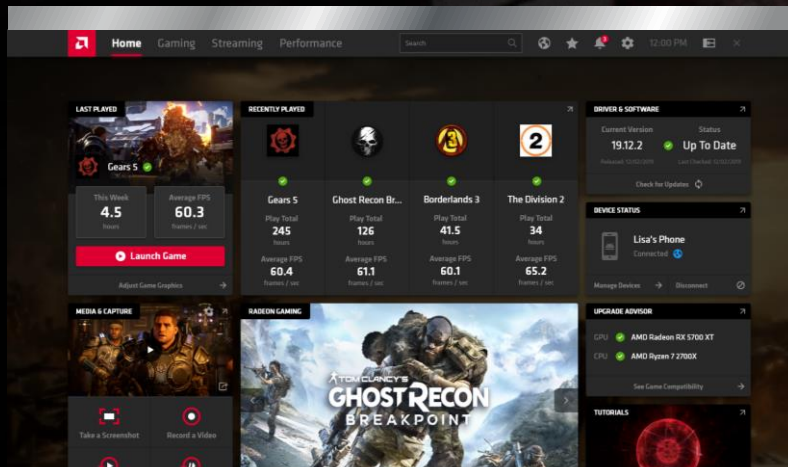
5700 SERIES

ULTIMATE **1440P AAA** GAMING



# AMD GAMING SOFTWARE

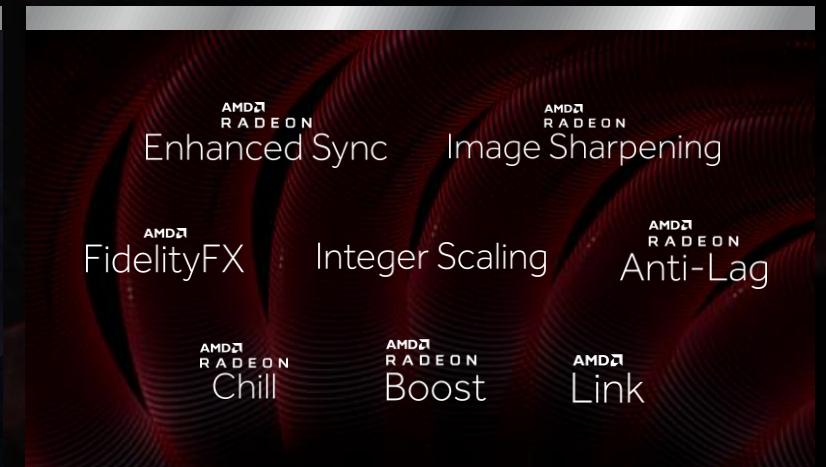
## ADVANCING STABILITY, PERFORMANCE AND FEATURES



AMD Radeon™ Software  
Adrenalin Edition



Day-0 Game Title  
Enhancements



Innovative Software  
Features



# RDNA 2

“NAVI 2X” NEXT GEN AMD RADEON™ GPUs

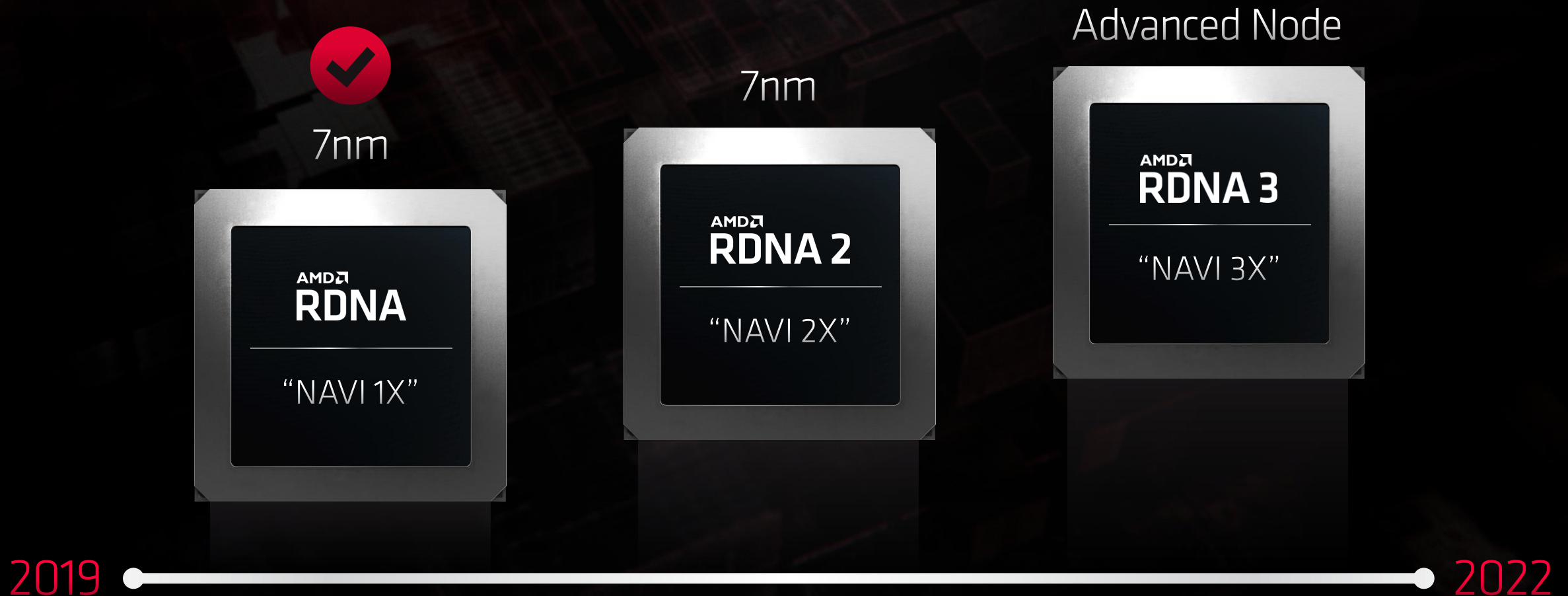
## ENTHUSIAST-CLASS PERFORMANCE

Extreme Performance  
with Efficient Power

Top-of-Stack GPUs  
with Uncompromising  
4K Gaming

Hardware-Based  
Ray Tracing and  
Variable Rate Shading

# GAMING GPU ROADMAP





# GAME CONSOLE LEADERSHIP

POWERING THE NEXT GENERATION OF GAMERS



Microsoft

SONY

## DEEP CUSTOMER RELATIONSHIPS

10+ Year Partnerships



## CURRENT GENERATION VOLUME

150M+ Shipped to Date

XBOX  
SERIES X

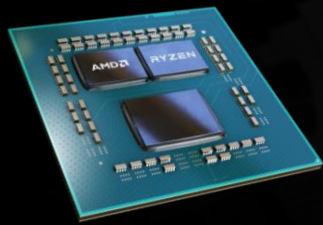
PS5

## NEXT GENERATION ON TRACK

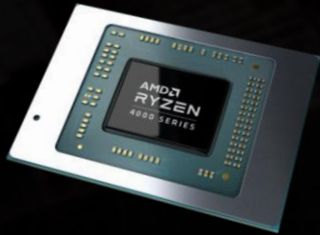
Coming Holiday 2020

# OUR PATH FORWARD

# DRIVING SUSTAINABLE GROWTH



AMD  
**RYZEN**



AMD  
**RYZEN**  
MOBILE PROCESSORS



AMD  
**RYZEN**  
THREADRIPPER



AMD  
**RADEON**



**SEMI-CUSTOM**

Industry's  
Best CPUs

Leadership  
GPUs

Innovative  
SOC Capability

Leadership Across  
Every Segment

The image features a dark, high-contrast background of a 3D-rendered microchip. The chip's surface is composed of numerous square and rectangular blocks, some of which are illuminated with a warm, reddish-orange glow, creating a sense of depth and complexity. Overlaid on this background is the AMD logo in a clean, white, sans-serif font. The logo consists of the letters 'AMD' followed by a stylized, geometric symbol that resembles a triangle or a stylized 'A' with a square cutout.

**AMD**



## ENDNOTES

CPK-26: Testing by AMD Performance Labs as of December 28, 2019 using the MAXON Cinema4D renderer via Cinebench R20.06 on the Core i9-9980XE, Core i9-10980XE, AMD Ryzen™ Threadripper™ 3970X and AMD Ryzen™ Threadripper™ 3990X processors. Results may vary.

RZ3-72: Testing by AMD performance labs on 09/15/2019, comparing the AMD Ryzen 9 3950X (AMD's fastest 16-core) to the Intel Core i9-9960X (Intel's fastest 16-core), Using the Cinebench R20 single-core benchmark score and Cinebench R20 multi-core benchmark score to measure single-core and multi-core performance for each processor. Performance results may vary.

RM3-127 - "Ultrathin laptop processor" defined as 15W typical TDP. Testing by AMD Performance Labs as of 12/09/2019 utilizing an AMD Ryzen™ 4800U reference system, a Dell XPS 7390 system with 10th Gen Intel® Core i7-1065G7 processor, and a Dell XPS 7390 with a 10th Gen Intel® Core i7-10710U processor using Cinebench R20 1T, Cinebench R20 nT and 3DMark 11 Performance. Results may vary. 3DMark is a registered trademark of Futuremark Corporation.

RZ3-14: "Advanced" defined as superior process technology in a smaller node and unique support for PCIe® Gen 4 in the gaming market as of 05/26/2019.

PP-3: For general business laptops and desktops AMD Memory Guard, full system memory encryption, is included in AMD Ryzen PRO and Athlon PRO processors.

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 R20 Benchmark. Results may vary.

RZ3-24: AMD "Zen 2" CPU-based system scored an estimated 15% higher than previous generation AMD "Zen" based system using estimated SPECint®\_base2006 results. SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. See [www.spec.org](http://www.spec.org).

RM3-250: Testing by AMD performance labs in February 2020, utilizing a Ryzen™ 7 4800 in an AMD reference system and a previous generation Ryzen™ 7 3700U in an AMD reference system and tested in 3DMark Time Spy. Results may vary. 3DMark is a registered trademark of Futuremark.



## ENDNOTES

RM3-63: Testing by AMD Performance Labs as of 12/09/2019 utilizing an AMD Ryzen™ 4800U reference system and a Dell XPS 7390 system with Intel® Core i7-1065G7 processor in Cinebench R20 1T and nT. Results may vary.

RM3-87: Testing by AMD Performance Labs as of 12/09/2019 utilizing an AMD Ryzen™ 4800U reference system and a Dell XPS 7390 system with Intel® Core i7-1065G7 processor in 3DMark Timespy. Results may vary. 3DMark is a registered trademark of Futuremark Corporation.

RNP-1: Source: IDC PC Device Tracker data, 2019Q3, AMD has gained the most share among PC processor vendors for x86 processors for consumer and commercial desktops and notebooks from Q2 2017 through Q3 2019.

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. RNP-13

RX-325: Testing done by AMD performance labs 6/1/19, using the Division 2 @ 25x14 Ultra settings. Performance may vary based on use of latest drivers.

RX-338: Testing done by AMD performance labs 5/30/2019 on Core i9-9900K (3.6 GHz), 16GB DDR4-3200MHz, GIGABYTE Z390 AORUS ELITE, Win 10 64-bit, AMD Driver 19.30, Nvidia Driver 430.64. Using The Witcher 3 @ 1440p Ultra, Battlefield 5 @ 1440p Ultra, Metro Exodus @ 1440p Extreme, Call of Duty: Black Ops 4 @ 1440p Very High, Sid Meier's Civilization 6 @ 1440p Ultra, Far Cry New Dawn @ 1440p Ultra, Tom Clancy's Ghost Recon Wildlands @ 1440p Ultra, The Division 2 @ 1440p Ultra, Assassin's Creed Odyssey @ 1440p ultra and Shadow of the Tomb Raider @ 1440p highest, best performing APIs.

PC manufacturers may vary configurations yielding different results. Performance may vary based on use of latest drivers.

RX-418: Testing done by AMD performance labs 12/20/2019 on RX 5600 XT (Driver: AMD 19.50), GTX 1660Ti (Driver: Nvidia 441.41 WHQL), Ryzen 7 3800X, 16GB DDR4-3200MHz, GIGABYTE X570 AORUS MASTER, F10 bios, Win10 Pro x64 18362. PC manufacturers may vary configurations yielding different results. Games tested include Battlefield 5, Borderlands 3, Call of Duty: Modern Warfare, The Division 2, Gears of War 5, Monster Hunter World, Red Dead Redemption, Star Wars Jedi: Fallen Order, and Ghost Recon Breakpoint. Performance may vary.

## ENDNOTES

GD-115: Compatible with Radeon™ consumer graphics products in supported DirectX®9 and DirectX®11 games for Windows®7/8.1/10. For more details and a whitelist of supported games, see <http://www.amd.com/en-us/innovations/software-technologies/radeon-software/gaming/radeon-chill>. GD-115

GD-154: Integer Display Scaling is compatible with Windows 10. Hardware compatibility includes Radeon R7 360 series, Radeon R7 260 series, Radeon HD 7790, Radeon HD 8770, Radeon R9 390 series, Radeon R9 290 series, Radeon R9 380 series, Radeon R9 285, Radeon RX 400 series, Radeon RX 500 series, Radeon RX Vega series, Radeon VII, Radeon RX 5000 series, Radeon Pro Duo, Radeon R9 Fury series and Radeon R9 Nano consumer dGPUs, and Ryzen 2000 and newer APUs, including hybrid and detachable graphics configurations.

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

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

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

GD-159: Game streaming requires phone or tablet which supports Android 5.0 and greater or iOS 11 and greater. For TV support, Apple TV 4th and 5th generation running tvOS 12.x and greater, or Android TV 5.1 and greater are required. Streaming at 4K requires 4K capable streaming hardware and is compatible with: AMD Radeon™ GCN-based discrete graphics and newer. Supports Windows® 7 and 10. Game Streaming available anywhere there is a high speed internet connection. For local profiles, all devices must be on the same local network. For internet streaming to work, your router must allow port forwarding and your PC must not be behind a network configuration that hinders connectivity. Controllers must be compatible with selected game and headset, please consult vendor for compatibility information.

GD-164: Compatibility and feature availability depend on system manufacturer and/or packaged driver version. For the most up-to-date drivers, visit [AMD.com](http://AMD.com).

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