

Qualcomm

**DON
MCGUIRE**

Chief Marketing Officer
Qualcomm Incorporated



Snapdragon
SUMMIT



EXTRAORDINARY



**POWERED BY
SNAPDRAGON**



~3B devices

2X

brand awareness

10X

more likely to
recommend Snapdragon

16%

more in premium
willing to pay

Source: 2023 Global Snapdragon Brand Tracker, April-May 2023; N=12,000 smartphone users (US, UK, Germany, China, India, Indonesia); Snapdragon brand performance compared to competitor average for Android smartphone processors.





~14M

Snapdragon Insiders



As of October 20, 2023



Qualcomm

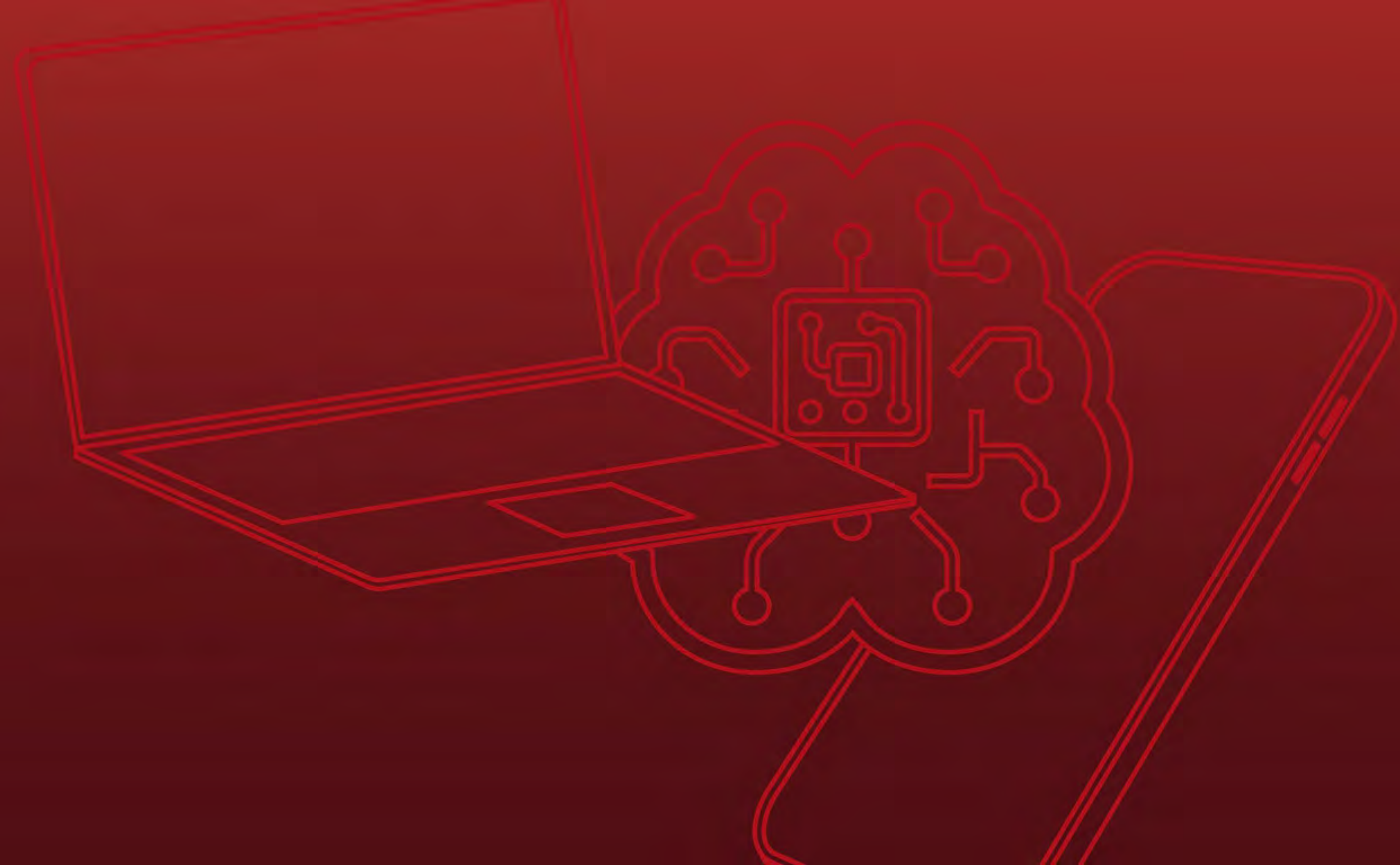
CRISTIANO AMON

President and CEO
Qualcomm Incorporated

@cristianoamon



SNAPDRAGON POWERS WHAT'S NEXT



**THE
GENERATIVE**



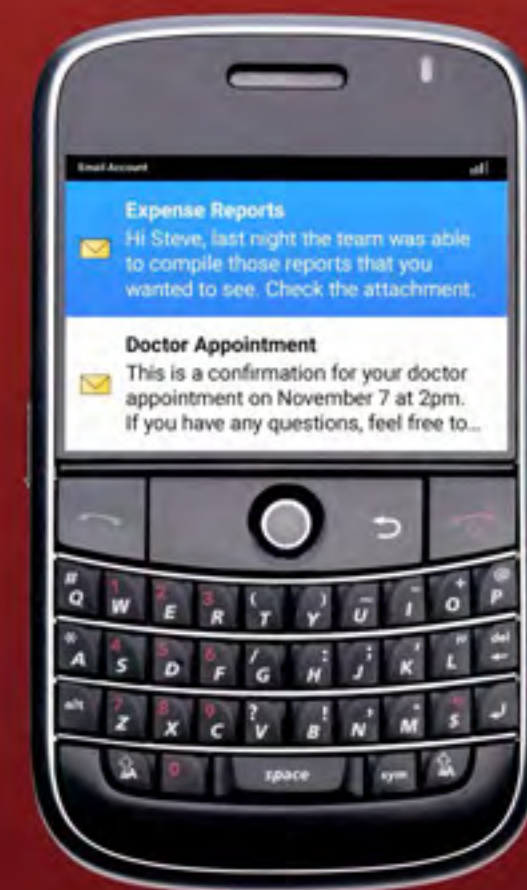
AI AGE

AI everywhere





Voice + text



Messaging + email



Mobile computing



Next





Snapdragon



The new user experience



Oct. 29

Your day with Naomi

12:00 *From calendar*
Meet at the corner of Smith and 10th



From chat
Visit open air pop-up
7245 Manchester St



1:30 *Based on restaurants you like · \$\$ range*
Lunch at Shinrin Izakaya
215 E 4th St

Table reserved



From favorites
Shopping at City Farmer's Market
215 W 8th St



From past activities
Stroll through sculpture garden
456 W 10th St

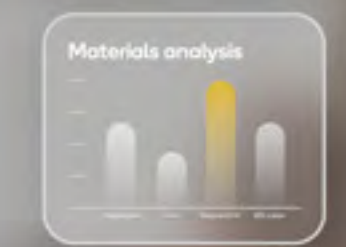
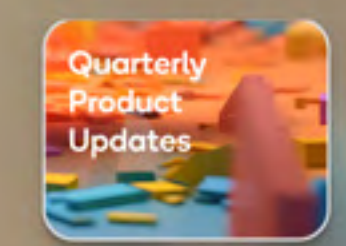
From past activities
Visit photography exhibit

More info



4:30 *From chat*
Tea at Komorebi Tea House
57 E Union St

Tasting scheduled



Lightning SDX



Launching
Spring 2024

- 80% carbon-free materials
- Best-selling blue colorway
- Premium insole support
- Tier 1 marketing plan



Call with John Schmidt,
General Contractor



Premium
tile wall



On-device extends the possibilities of generative AI



Immediacy



Reliability



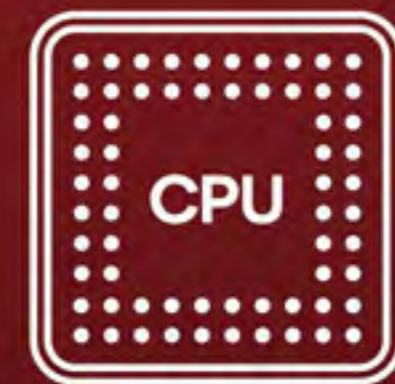
Personalization



Privacy

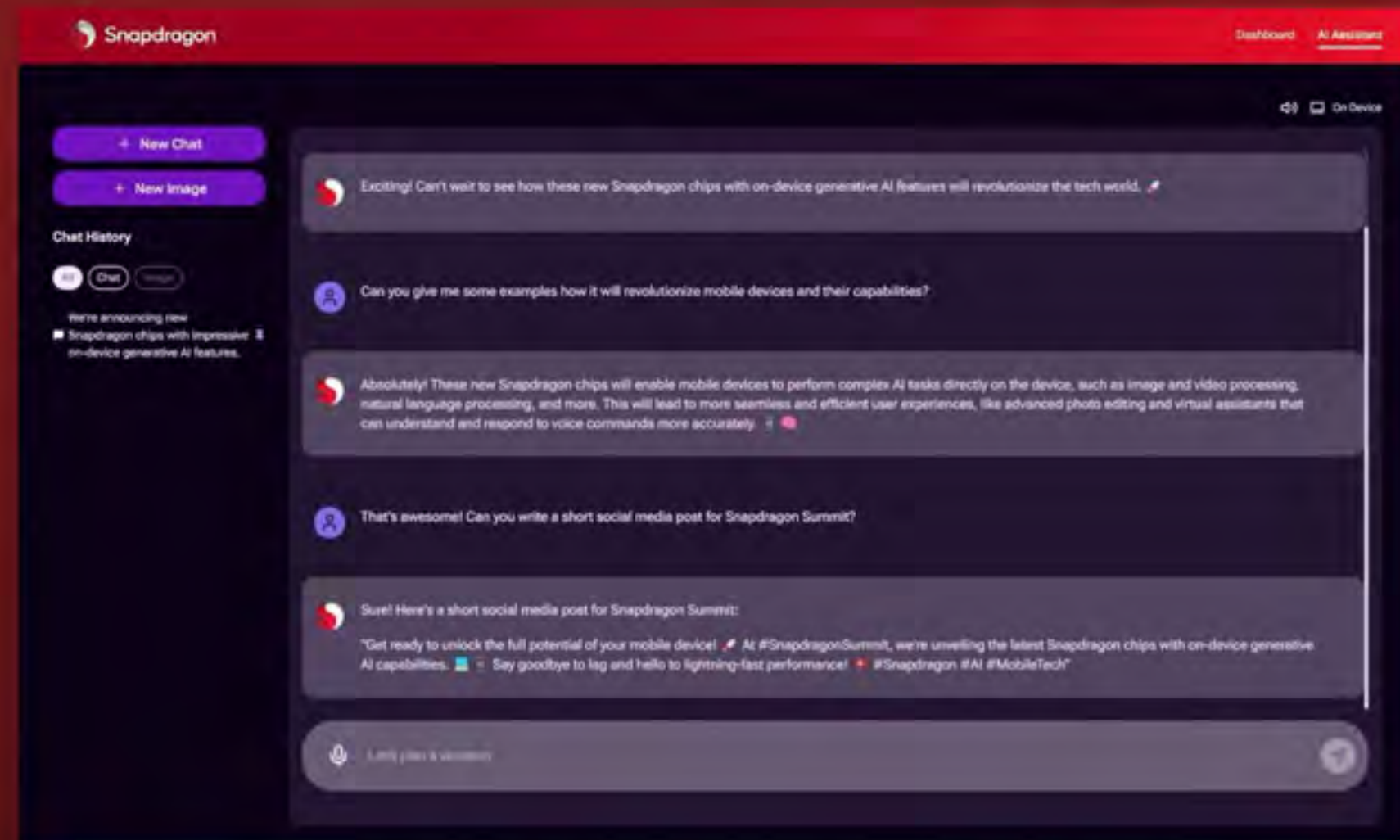
Optimized for AI

Qualcomm® AI Engine



On-device voice assistant

7B parameters on device using Llama 2



Stable Diffusion

<1 second

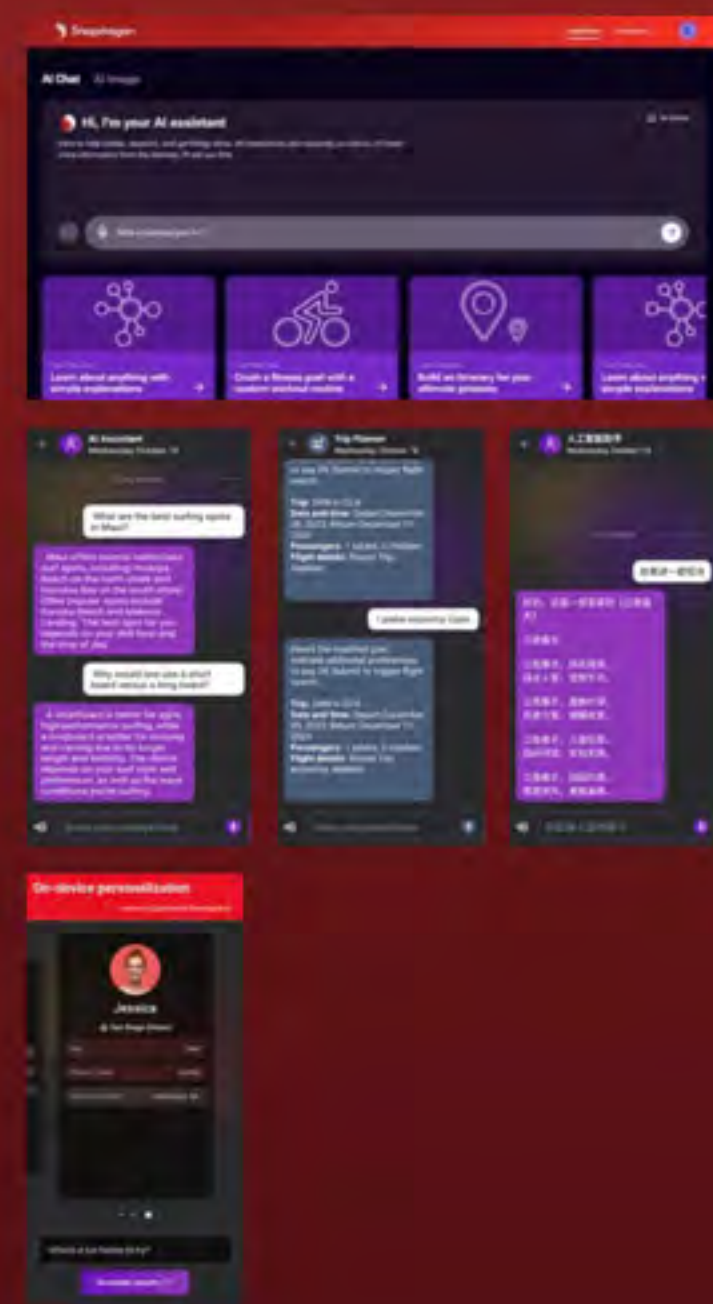


Photo expansion

2X larger photo



AI assistants



Content generation

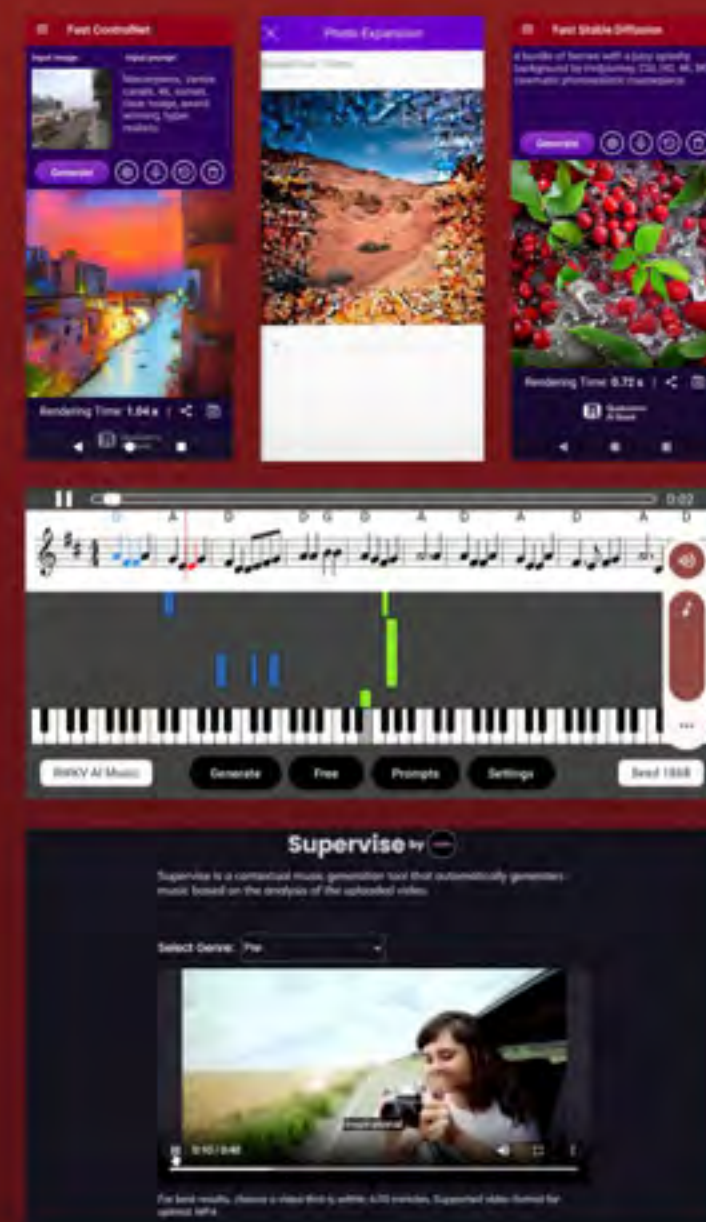
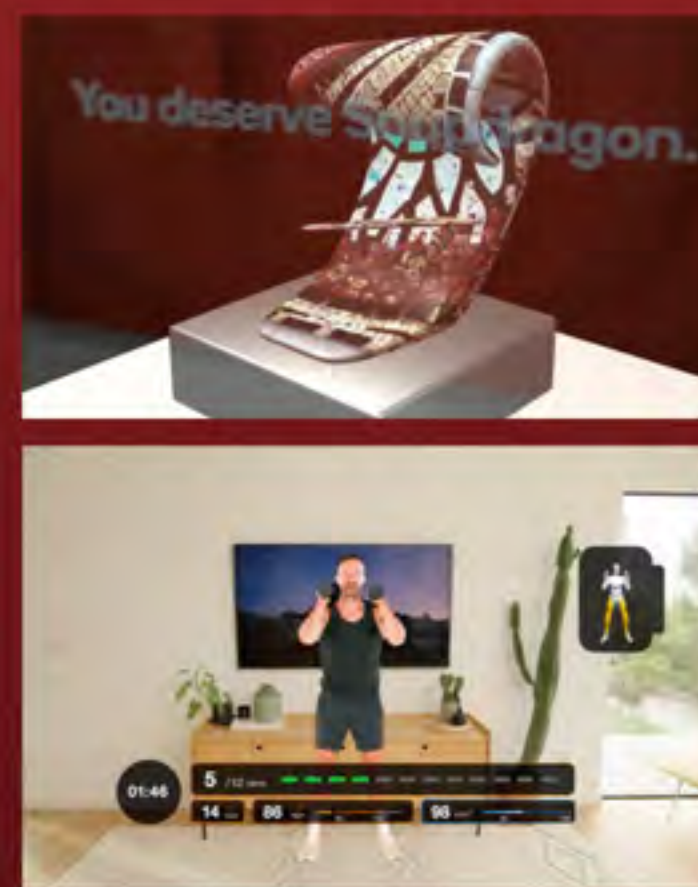


Photo and video editing



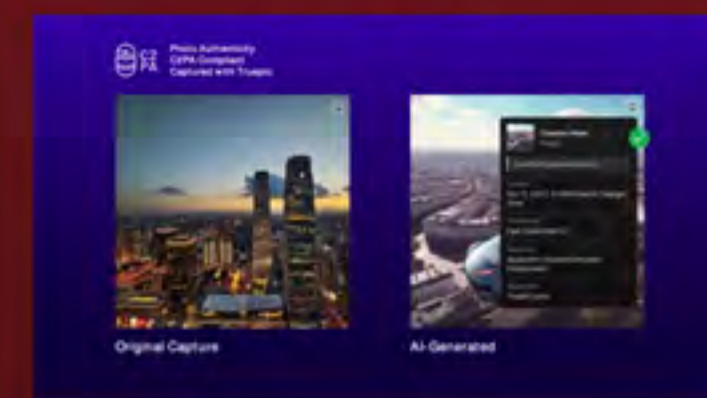
XR



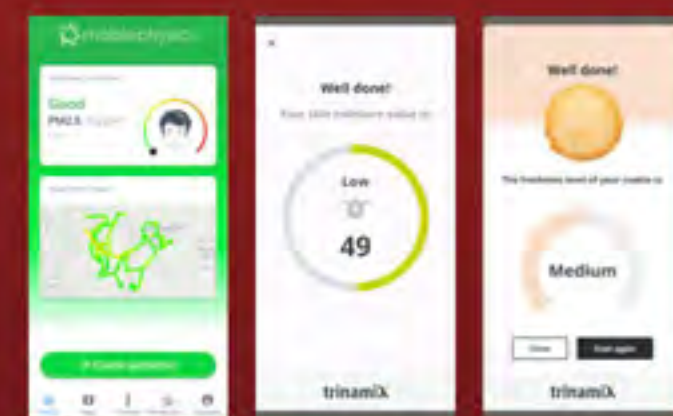
Gaming and entertainment



Content authentication and security



Sensing



Video conferencing



Industry-leading support for on-device models



Multiple models



Whisper



Llama 2



AI foundational models



ERNIE-3.5-SE



ChatGLM2



Large language model



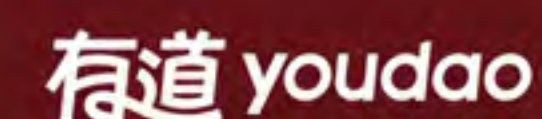
Stable Diffusion
ControlNet



Baichuan



GPT-J
Polyglot



有道子日



Large language model

Snapdragon AI leadership



Unparalleled on-device
AI performance

Best-in-class heterogeneous
computing capabilities

Scalable AI software tools

Horizontal ecosystem and AI
model support

Qualcomm

∞ Meta

**MARK
ZUCKERBERG**

Founder, Chairman and Chief Executive Officer
Meta

∞ Meta

REDEFINING
THE

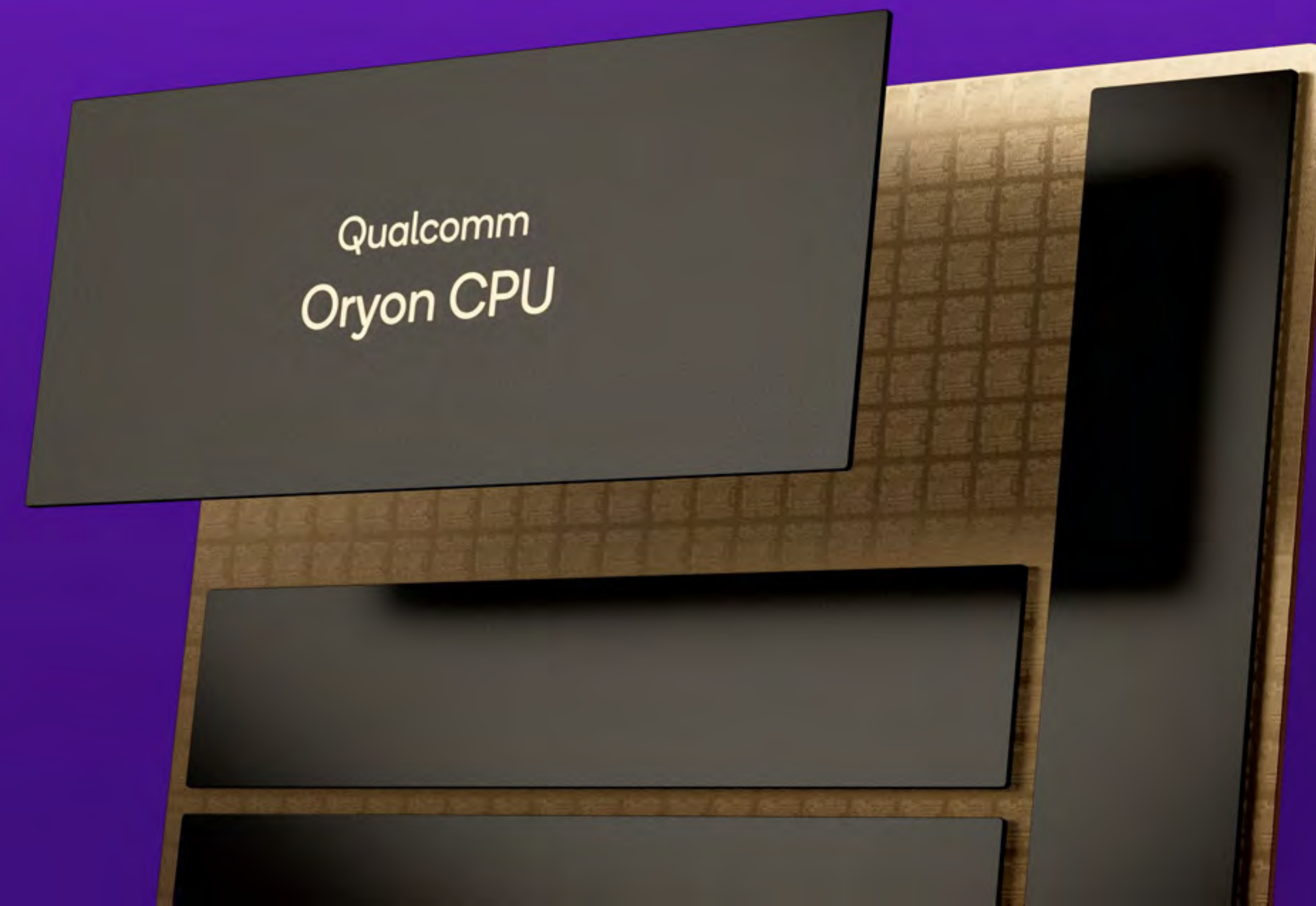
PC
EXPERIENCE



Qualcomm Oryon™ CPU

Qualcomm Oryon™ CPU

The new CPU leader in mobile computing



Qualcomm

GERARD WILLIAMS

SVP, Engineering
Qualcomm Technologies, Inc.

Qualcomm Oryon

Faster than leading ARM- compatible competitor

CPU Peak Performance is based on the geometric mean of 100 runs with 60 seconds in between runs utilizing Geekbench v6.2.1 in October 2023. Qualcomm Oryon was tested using a Qualcomm laptop reference design running Linux OS build Kernel 6.5.0-rc1 Debian Trixie/sid. The M2 Max was testing using an Apple MacBook Pro 16" 2023 (A2780-8103) 12/38C + 32GB laptop running MacOS. Power comparison reflects power as measured on both instrumented devices while running at the peak CPU performance of the M2 Max.

Single-threaded CPU performance



Qualcomm Oryon

Faster than leading ARM- compatible competitor

CPU Peak Performance is based on the geometric mean of 100 runs with 60 seconds in between runs utilizing Geekbench v6.2.1 in October 2023. Qualcomm Oryon was tested using a Qualcomm laptop reference design running Linux OS build Kernel 6.5.0-rc1 Debian Trixie/sid. The M2 Max was testing using an Apple MacBook Pro 16" 2023 (A2780-8103) 12/38C + 32GB laptop running MacOS. Power comparison reflects power as measured on both instrumented devices while running at the peak CPU performance of the M2 Max.

Matches competitor
peak performance at

30% less power

Single-threaded CPU performance

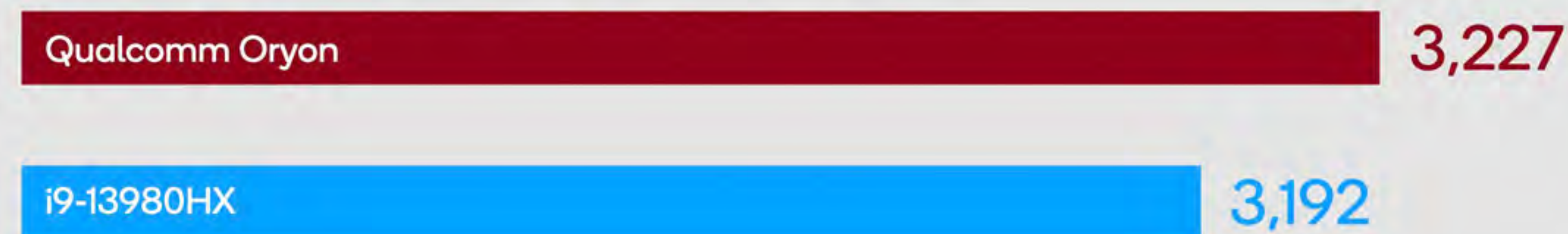


Qualcomm Oryon

Faster than leading x86 CPU

CPU Peak Performance is based on the geometric mean of 100 runs with 60 seconds in between runs utilizing Geekbench v6.2.1 in October 2023. Qualcomm Oryon was tested using a Qualcomm laptop reference design running Linux OS build Kernel 6.5.0-rc1 Debian Trixie/sid. The i9-13980HX was testing using an Asus ProArt Studiobook 16 OLED (H7604JV) laptop running Linux OS build Ubuntu 23.04 distribution with mainline 6.2.0 kernel; Intel p-state CPUFreq driver with EPP set to performance. Power comparison reflects power as measured on both instrumented devices while running at the peak CPU performance of the i9-13980HX.

Single-threaded CPU performance



Qualcomm Oryon

Faster than leading x86 CPU

CPU Peak Performance is based on the geometric mean of 100 runs with 60 seconds in between runs utilizing Geekbench v6.2.1 in October 2023. Qualcomm Oryon was tested using a Qualcomm laptop reference design running Linux OS build Kernel 6.5.0-rc1 Debian Trixie/sid. The i9-13980HX was tested using an Asus ProArt Studiobook 16 OLED (H7604JV) laptop running Linux OS build Ubuntu 23.04 distribution with mainline 6.2.0 kernel; Intel p-state CPUFreq driver with EPP set to performance. Power comparison reflects power as measured on both instrumented devices while running at the peak CPU performance of the i9-13980HX.

Matches competitor
peak performance at

70% less power

Single-threaded CPU performance



Qualcomm Oryon

**Coming to the Snapdragon
mobile platform in 2024**

Qualcomm

 Microsoft

**SATYA
NADELLA**

Chairman and Chief Executive Officer
Microsoft

 Microsoft

Qualcomm

ALEX KATOUIZIAN

SVP and GM, Mobile, Compute and XR
Qualcomm Technologies, Inc.

A NEW ERA OF INTELLIGENT COMPUTING

Snapdragon

X
Elite



**PERFORMANCE
REBORN**



Qualcomm Oryon

Game-changing performance

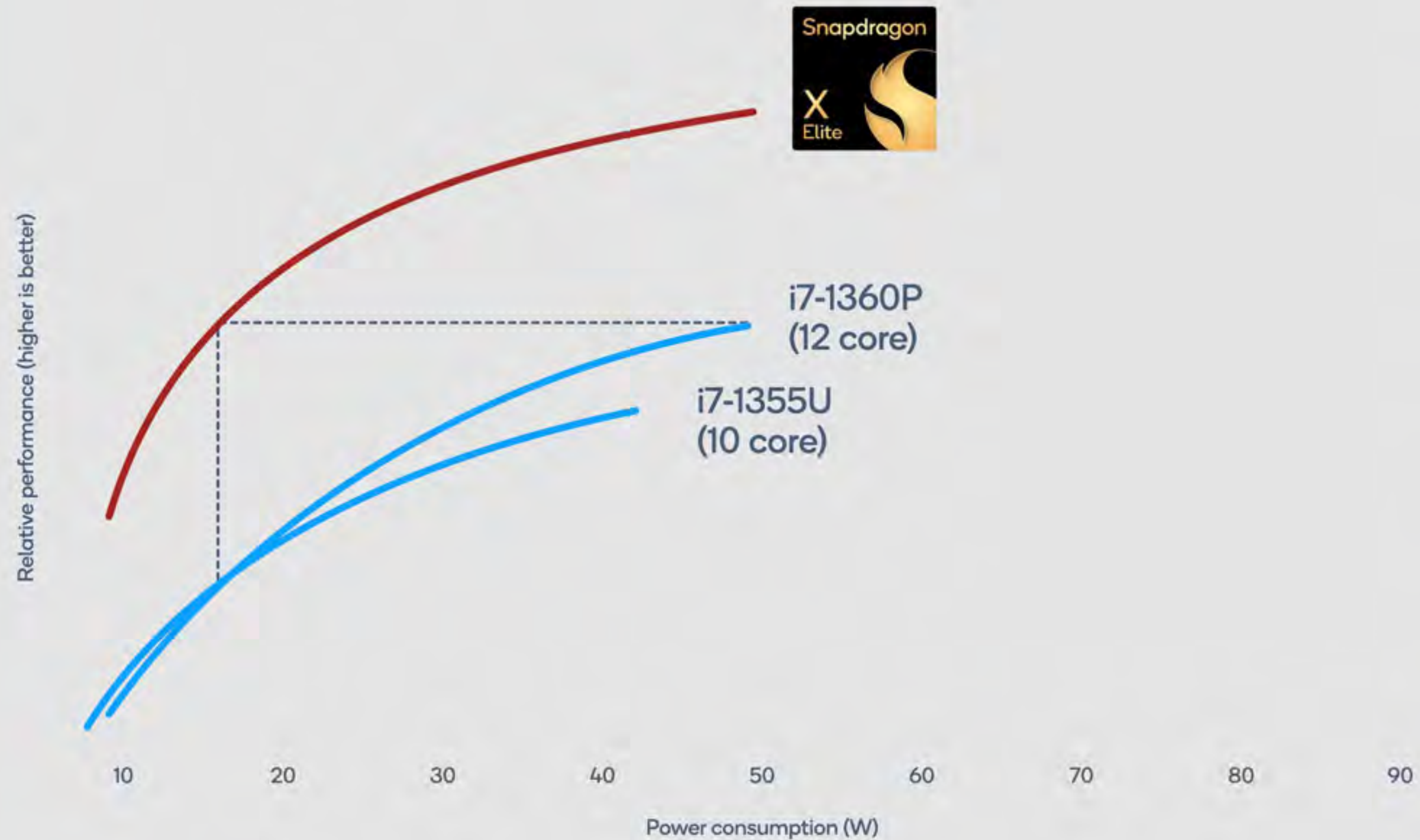


Snapdragon X Elite

Best-in-class CPU

Multi-threaded performance

CPU Performance is based on Geekbench v6.2 Multi-Thread on Windows OS run in October 2023. Snapdragon X Elite was tested using a Qualcomm laptop reference design on Windows OS. The i7-1360P (12 core) and i7-1355U (10 core) were tested using a Samsung Galaxy Book3 360 13" 2023 (NP730QFG) laptop and Samsung Galaxy Book3 15.6" 2023 (NP750XFG) laptop, respectively on Windows 11. Maximum performance reflected by i7-1360P and i7-1355U represent maximum achievable results in given platforms under unconstrained PL1/PL2 settings and no thermal limitations. Power and performance comparison reflects results based on measurements and hardware instrumentation of given devices.



Up to
2X
faster CPU
performance
vs. competition at
ISO power

Matches competitor peak
PC performance at

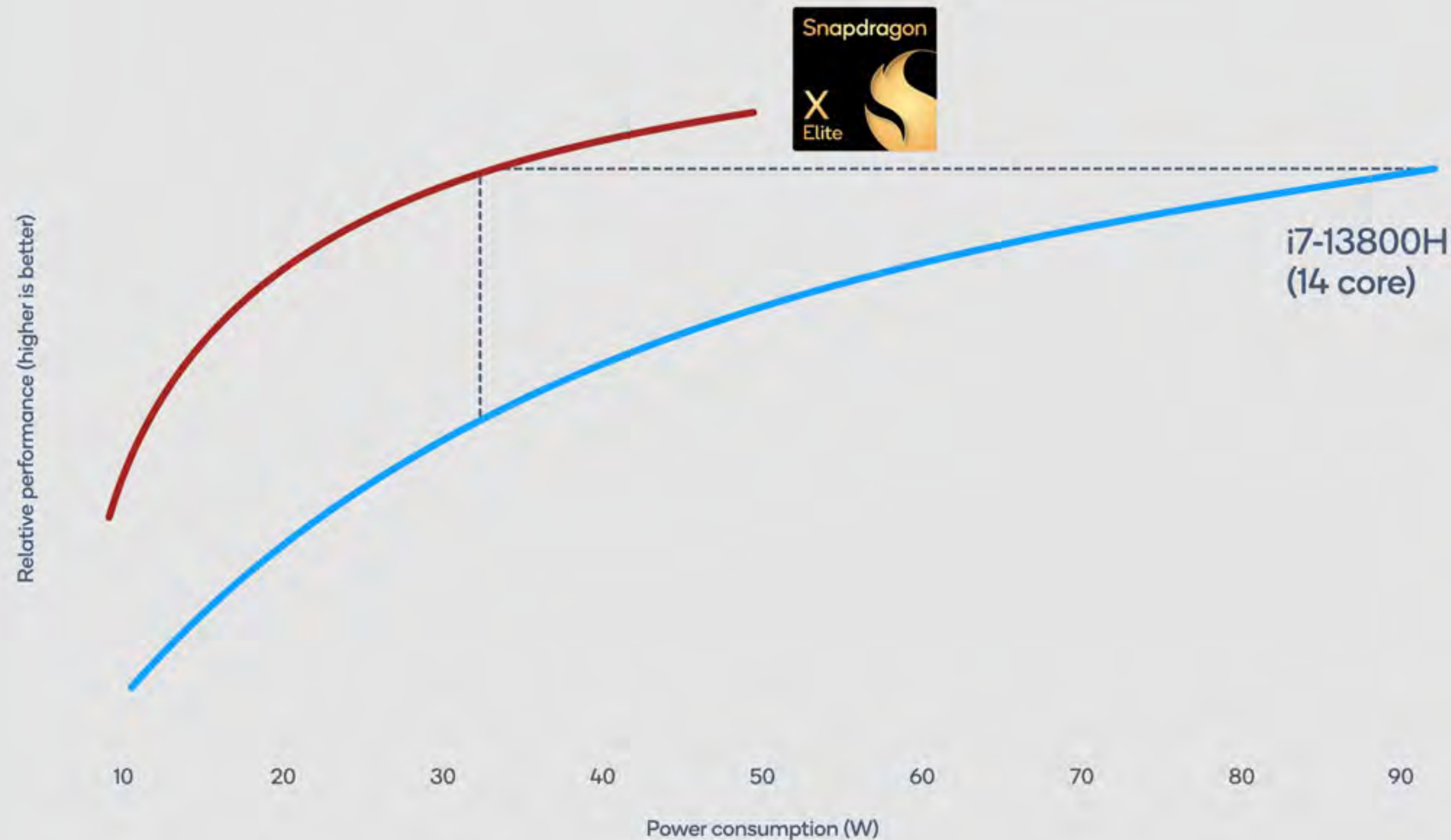
68%
less power

Snapdragon X Elite

Best-in-class CPU

Multi-threaded performance

CPU Performance is based on Geekbench v6.2 Multi-Thread on Windows OS run in October 2023. Snapdragon X Elite was tested using a Qualcomm laptop reference design on Windows OS. The i7-13800H (14 core) was tested using a Razer Blade 15 2023 (RZ09-0485) laptop on Windows 11. Maximum performance reflected by i7-13800H represents maximum achievable results in given platforms under unconstrained PL1/PL2 settings and no thermal limitations. Power and performance comparison reflects results based on measurements and hardware instrumentation of given devices.



Up to
60%
faster CPU
performance
vs. competition at
ISO power

Matches competitor peak
PC performance at
65%
less power



50%

faster peak multi-threaded
CPU performance vs. M2

CPU Performance is based on Geekbench v6.2 Multi-Thread on Windows OS run in October 2023. Snapdragon X Elite was tested using a Qualcomm laptop reference design running on Windows OS. The M2 was tested using a MacBook Pro 13" 2022 (A2338-8162) 8/10C + 16GB laptop running Mac OS. Power and performance comparison reflects results based on measurements and hardware instrumentation of given devices.


Qualcomm

Lenovo

**YANG "YY"
YUANQING**

Chairman and CEO
Lenovo

Lenovo

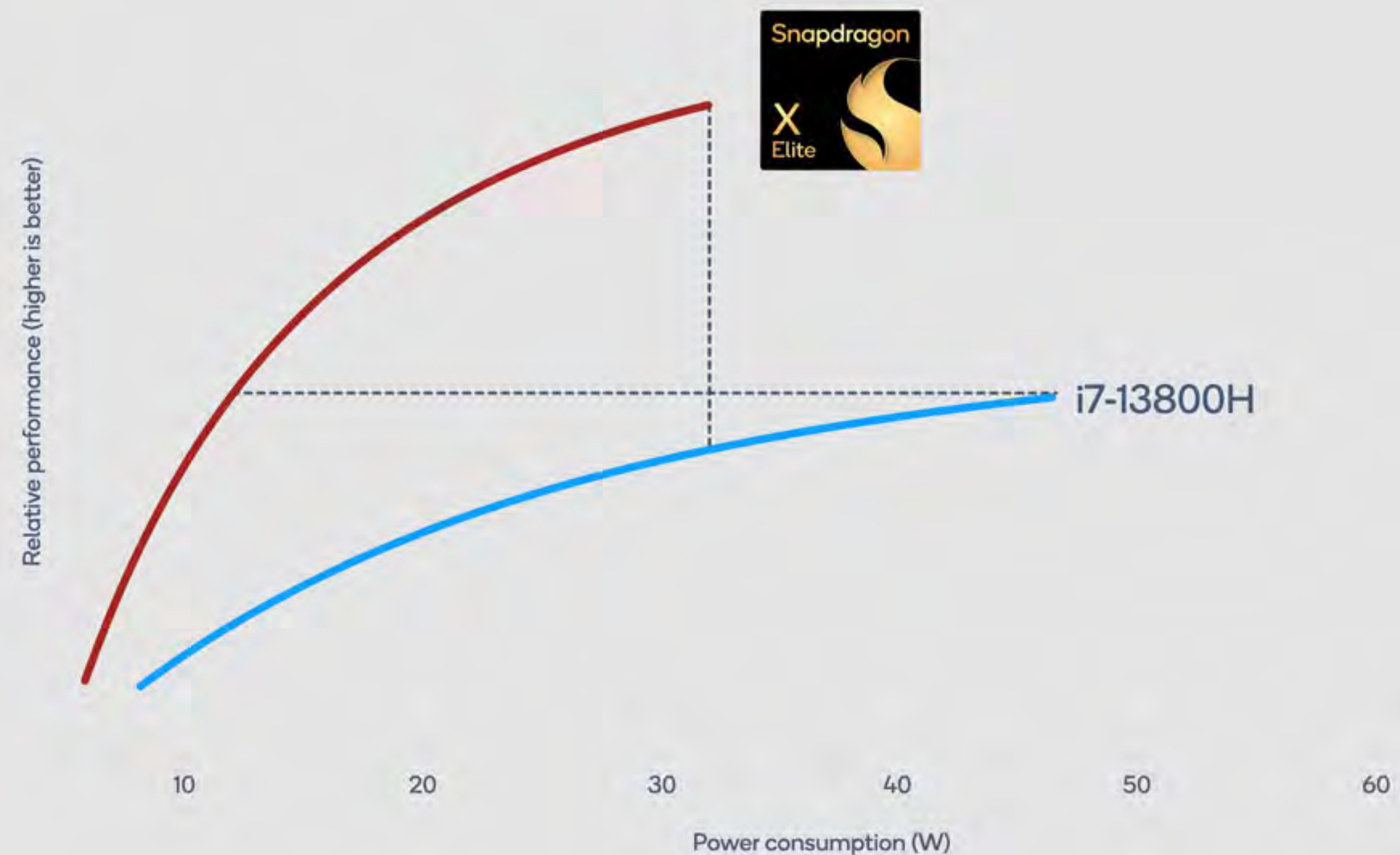


Qualcomm® Adreno™ GPU

Blazing graphics

Premium integrated GPU

GPU Performance is based on 3DMark WildLife Extreme run in October 2023. Snapdragon X Elite was tested using a Qualcomm laptop reference design on Windows OS and a pre-commercial build of Wildlife Extreme. The i7-13800H (14 core) was tested using a Razer Blade 15 2023 (RZ09-0485) laptop on Windows 11. Maximum performance reflected by i7-13800H represents maximum achievable results in given platform under unconstrained PL1/PL2 settings and no thermal limitations. Power and performance comparison reflects results based on measurements and hardware instrumentation of given devices.

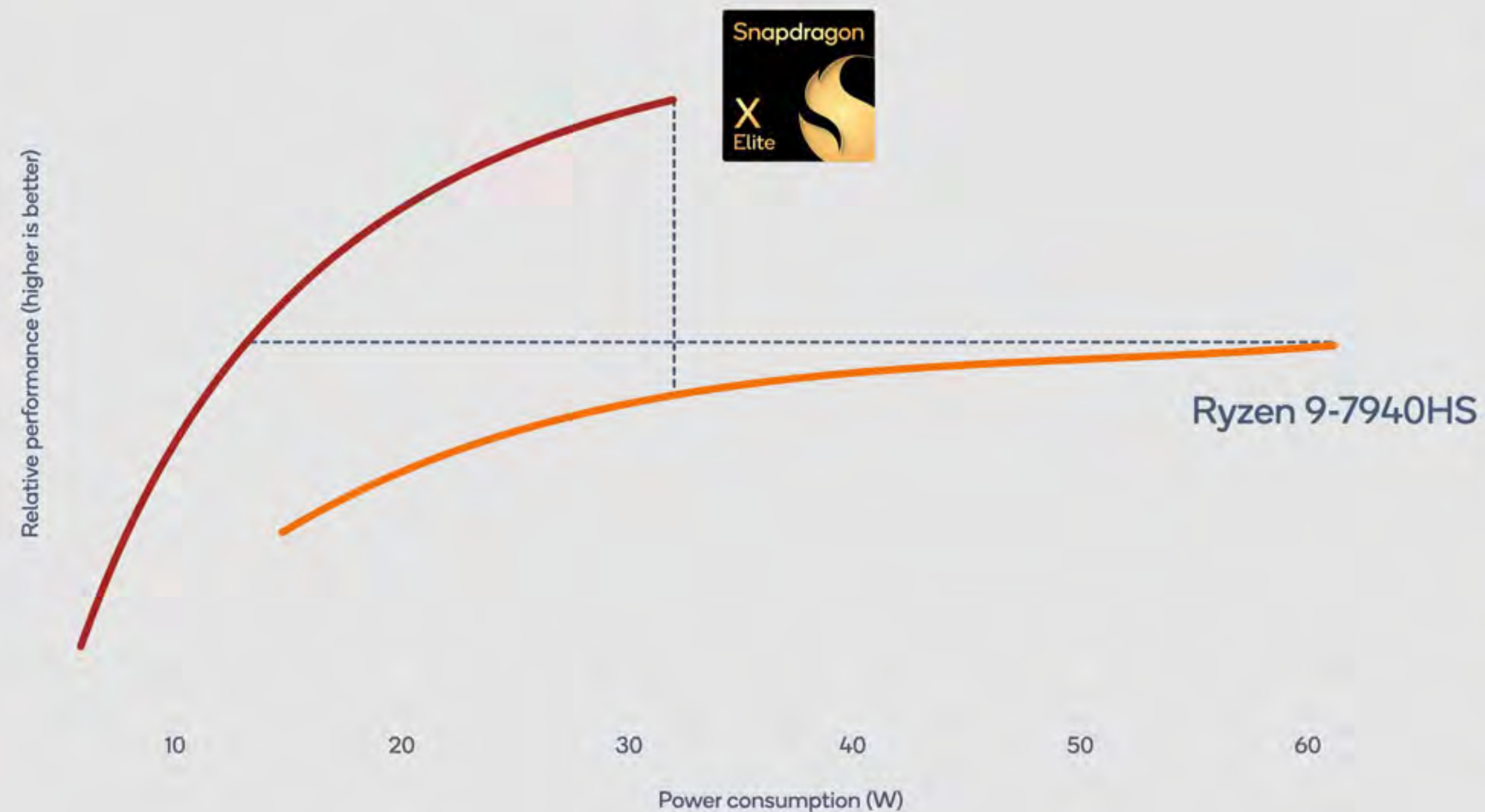


Up to
2X
faster GPU
performance
vs. competition at
ISO power

Matches competitor peak
PC performance at
74%
less power

Premium integrated GPU

GPU Performance is based on 3DMark WildLife Extreme run in October 2023. Snapdragon X Elite was tested using a Qualcomm laptop reference design on Windows OS and a pre-commercial build of WildLife Extreme. The Ryzen 9-7940HS (8 core) was tested using an Asus ROG Zephyrus G14 2023 (GA402XV) laptop on Windows 11. Maximum performance reflected by Ryzen 9-7940HS represents maximum achievable results in given platform under 80W SlowLimit/FastLimit settings and no thermal limitations. Power and performance comparison reflects results based on measurements and hardware instrumentation of given devices.



Up to
80%
faster GPU
performance
vs. competition at
ISO power

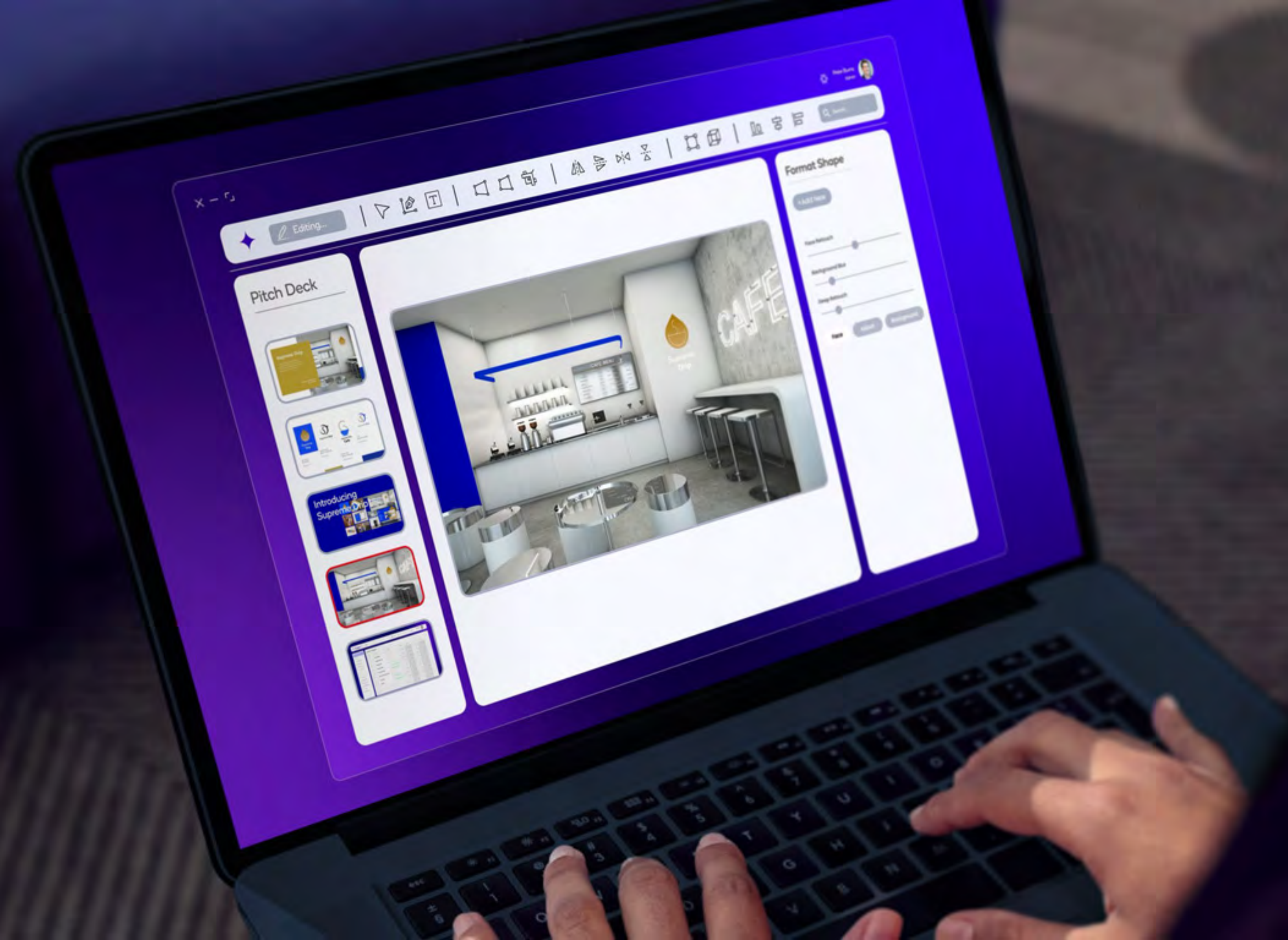
Matches competitor peak
PC performance at
80%
less power

The ultimate productivity setup



Snapdragon X Elite

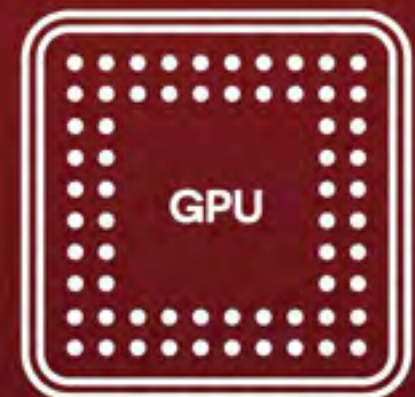
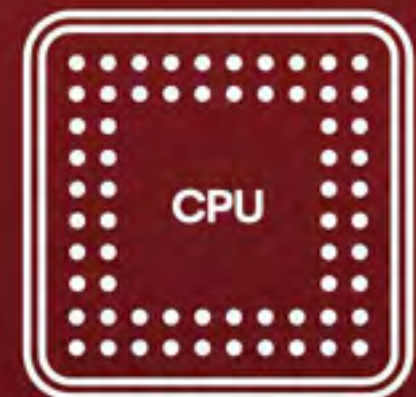
Built for AI



75
TOPS

Snapdragon X Elite

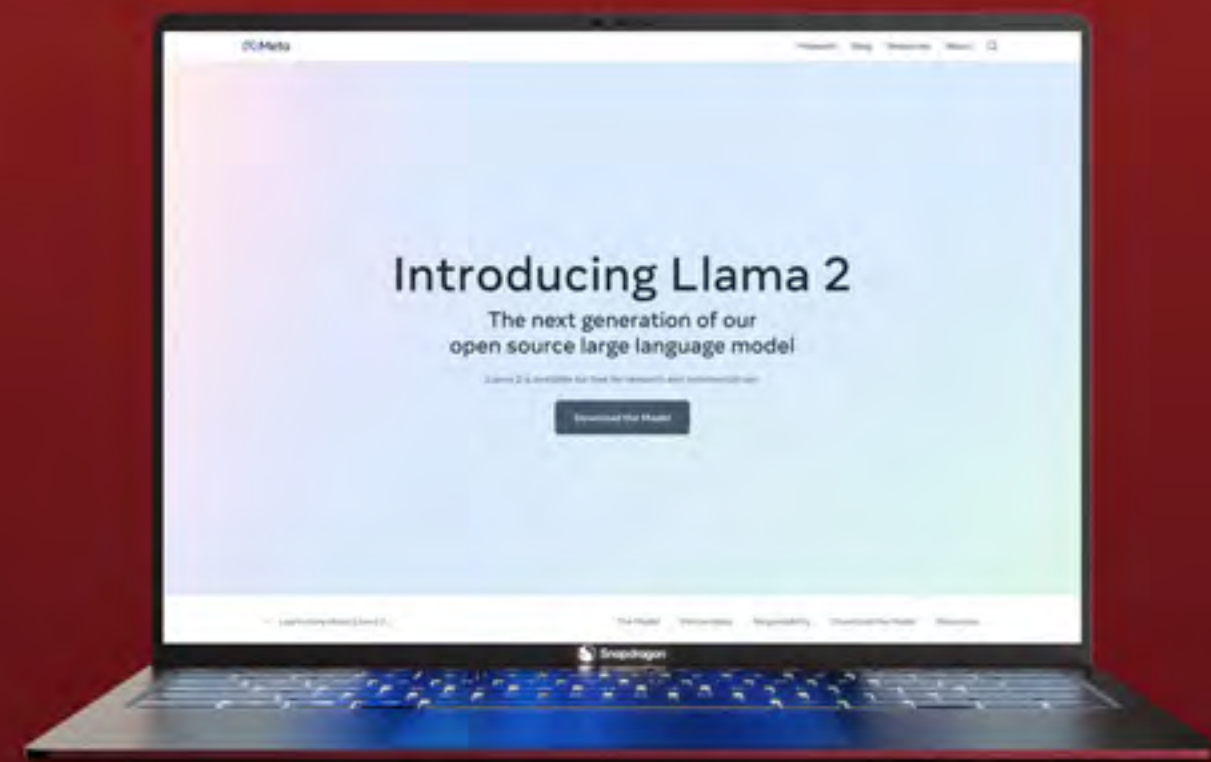
**Heterogenous AI
Engine performance**





Breakthrough AI performance





Meta Llama 2

7B

parameters

30

tokens per second

**A generative AI
powerhouse**

13B+
parameters
running on device

ECOSYSTEM COLLABORATION

Qualcomm



ENRIQUE LORES

President and Chief Executive Officer
HP Inc.





PAVAN DAVULURI

Corporate Vice President, Microsoft Windows + Devices
Microsoft

Qualcomm

DEBRA MARICH

Sr. Director, Product Marketing
Qualcomm Technologies, Inc.

Powering smarter experiences

Ultra-fast 5G and Wi-Fi 7 connectivity



Powering smarter experiences

Advanced audio and camera capabilities



Powering smarter experiences

Vault-like security and privacy



**SMARTPHONES
THAT**



**POWER
YOUR PASSION**

**The platform of choice
for premium Android
smartphones**



The platform of choice
for on-device gen AI



Qualcomm

Google

**DAVID
BURKE**

Vice President, Engineering, Android
Google

Google

Snapdragon sets the performance bar



Snapdragon
connect



Snapdragon
smart



Snapdragon
sound



Snapdragon
secure



Snapdragon
sight



Snapdragon
elite gaming



Improvements across every subsystem

30%

Faster performance

CPU

25%

Faster performance

GPU

98%

Faster performance

NPU

Improvements across every subsystem

5G
Advanced
Ready

Wi-Fi 7

Dual
Bluetooth®

THE TITAN OF ON-DEVICE INTELLIGENCE

**Generative AI that
moves with you**



Up to

10B parameters
running on device

<1
second

A new benchmark

**World's fastest
on-device Stable Diffusion**

**Built with the
content creator
in mind**



Qualcomm

MINGJUAN HOU

Vice President, Marketing
Qualcomm Wireless Communication Technologies

Breakthrough camera experiences with AI







The image authenticity challenge

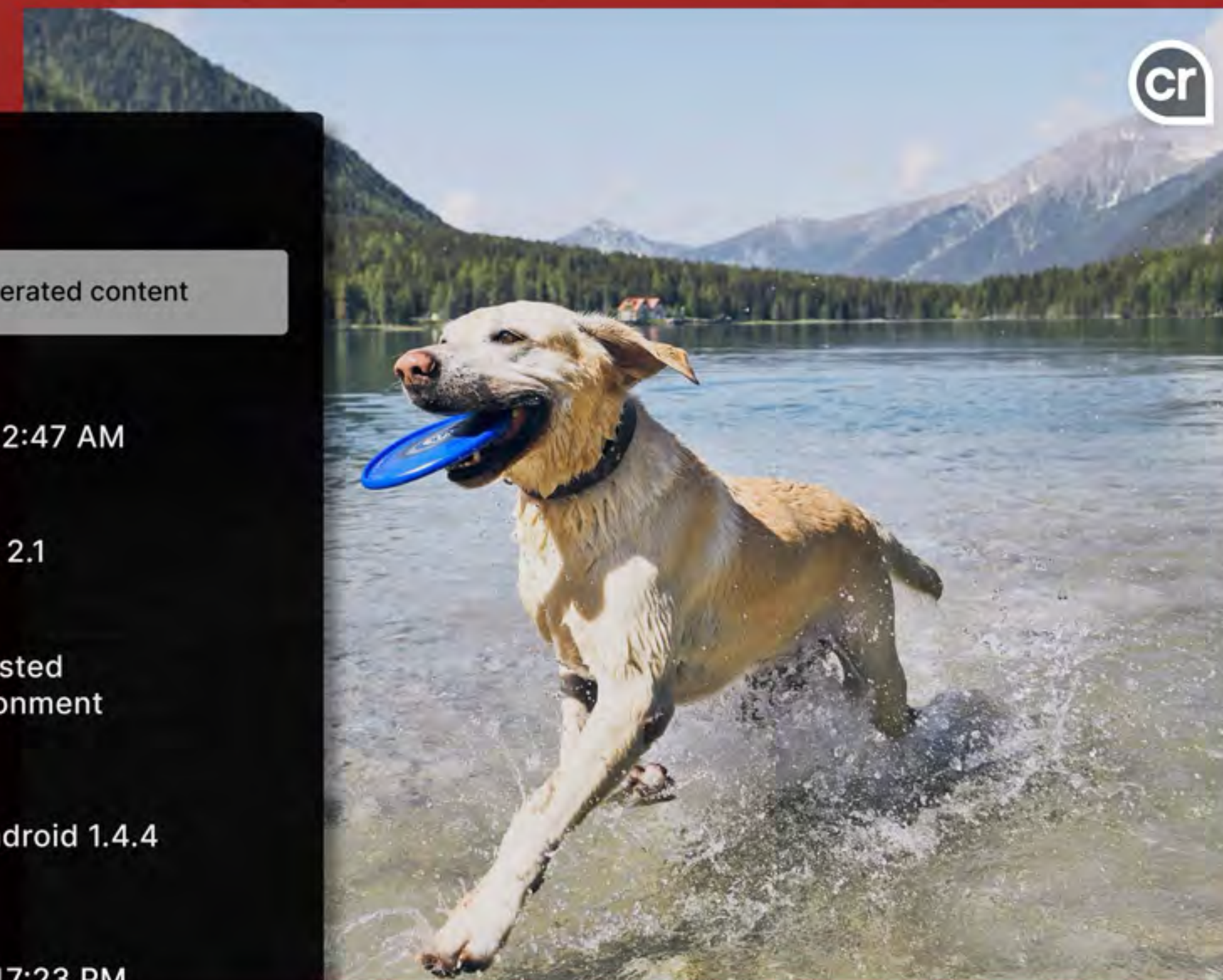




Greater transparency using Truepic with C2PA

Content History

 Creative Work Photo	<p>Contains AI-generated content</p> <p>Captured Oct 17, 2023 7:22:47 AM</p> <p>Created with Fast ControlNet 2.1</p> <p>Signed by Qualcomm® Trusted Execution Environment</p> <p>Signed with Truepic Lens Android 1.4.4</p>
 Original	<p>Captured Oct 13, 2023 1:47:23 PM</p> <p>Location New Buffalo, MI, US</p>





WILLIAM LU

Partner and President
Xiaomi Group

SOUND



REIMAGINED

Powering the world's leading audio brands

Astell&Kern

 audio-technica

BOSE

Bowers & Wilkins

clear

DENON

EDIFIER

FIIO

Jabra GN

 LG


MASTER & DYNAMIC

ODDICT



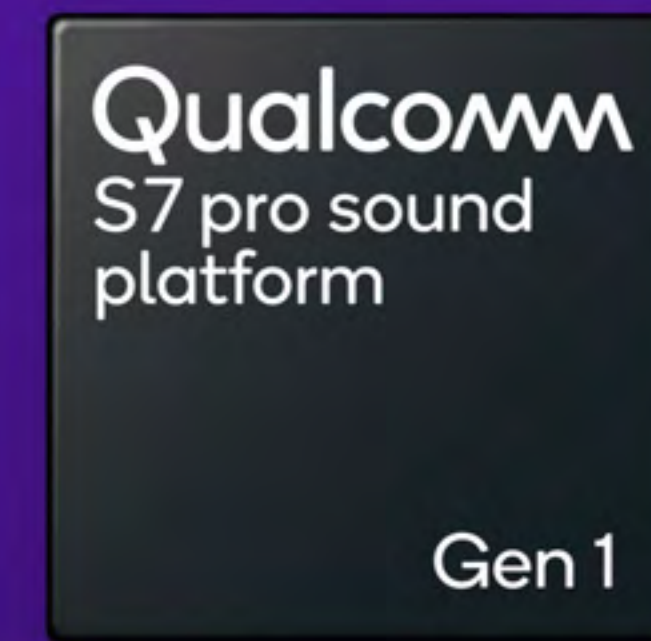

REDMAGIC

 SENNHEISER
A brand licensed by Sonova



vivo

 YAMAHA



Qualcomm

PRATIMA

PAI

Vice President, Technology
Qualcomm Technologies International, Ltd.

Igniting audio innovation

Breakthrough connectivity

Power-efficient processing

On-device AI





Redefining audio connectivity

Industry's first micro-power Wi-Fi solution

Untethered audio, anywhere

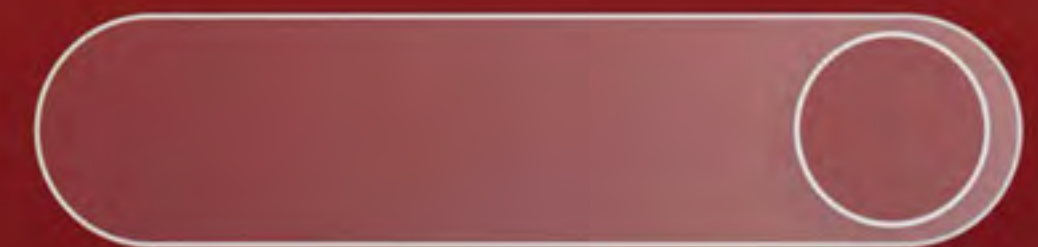
With Qualcomm® XPAN* technology

Qualcomm® Expanded Personal Area Network Technology (XPAN)





Bluetooth®



Wi-Fi

A man with a shaved head, wearing a purple long-sleeved shirt and a thin chain necklace, is sitting at a wooden desk in a modern office. He is looking down at a laptop in front of him, with his hands on the keyboard. To his right is a large computer monitor displaying a webpage. A black desk lamp is positioned over the monitor. In the background, other office workers are visible at their desks, some with multiple monitors. The office has a warm, wooden floor and white walls. The text "Intelligent sound with on-device AI" is overlaid on the left side of the image in a large, white, sans-serif font.

**Intelligent sound
with on-device AI**

Qualcomm

BOSE

LILA
SNYDER

Chief Executive Officer
Bose

BOSE

EXPERIENCES



**THAT BREAK
BARRIERS**



**Effortless
multi-device
experiences**

The foundation for intuitive experiences

**Bluetooth®
Wi-Fi**

Advanced connectivity

**Qualcomm®
Sensing Hub**

Always-on AI processing

**APIs, Libraries,
Protocols**

Software enhancements

Collaborating across ecosystems with Seamless



oppo

 Microsoft

Lenovo

HONOR

ASUS








Android

**GET READY
TO MOVE**



THANK YOU



Follow us on:       

For more information, visit us at:
snapdragon.com & snapdragoninsiders.com

Nothing in these materials is an offer to sell any of the components or devices referenced herein.

©2018-2023 Qualcomm Technologies, Inc. and/or its affiliated companies. All Rights Reserved.

Qualcomm, Snapdragon, Qualcomm AI Engine, Qualcomm Oryon, Adreno, Qualcomm XPAN, Qualcomm Sensing Hub, and Snapdragon Seamless are trademarks or registered trademarks of Qualcomm Incorporated. Other products and brand names may be trademarks or registered trademarks of their respective owners. Other products and brand names may be trademarks or registered trademarks of their respective owners.

References in this presentation to "Qualcomm" may mean Qualcomm Incorporated, Qualcomm Technologies, Inc., and/or other subsidiaries or business units within the Qualcomm corporate structure, as applicable. Qualcomm Incorporated includes our licensing business, QTL, and the vast majority of our patent portfolio. Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, substantially all of our engineering, research and development functions, and substantially all of our products and services businesses, including our QCT semiconductor business.

Snapdragon and Qualcomm branded products are products of Qualcomm Technologies, Inc. and/or its subsidiaries. Qualcomm patented technologies are licensed by Qualcomm Incorporated.