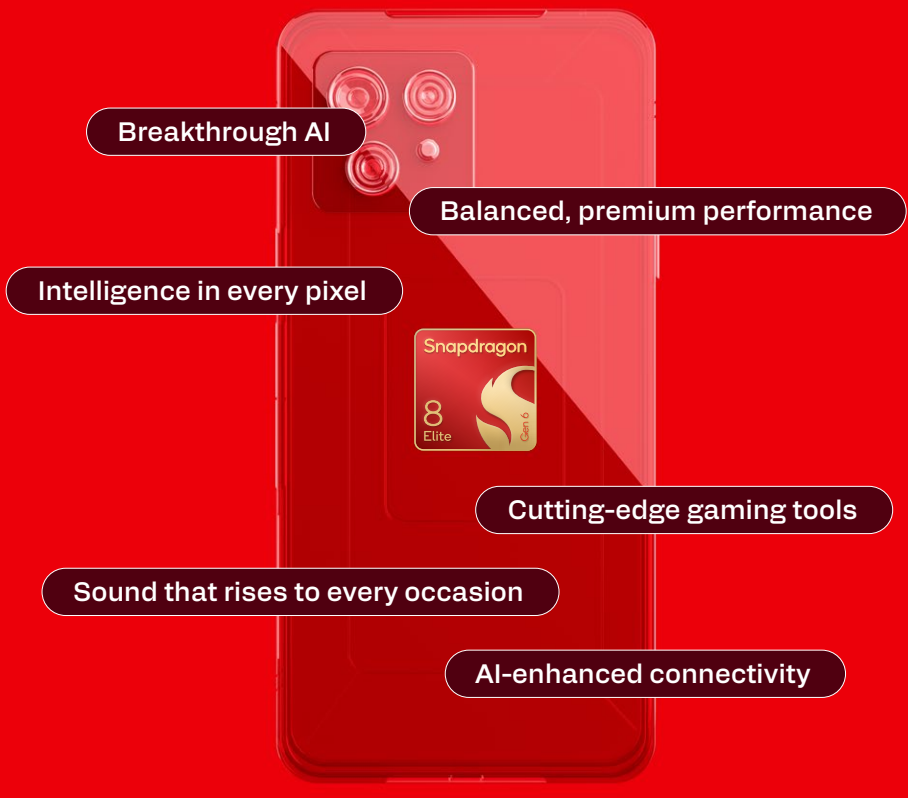
Snapdragon

Snapdragon® 8 Elite Gen 6 Mobile Platform



The Snapdragon 8 Elite Gen 6 Mobile Platform delivers the next generation of mobile excellence with balanced, premium performance. Breakthrough AI powers personalized on-device agents, with AI-enhanced connectivity supporting every move. Cutting-edge gaming tools and precise, pixel-level capture put extraordinary creative capabilities right at your fingertips.

10% improved CPU performance

35% improved GPU performance

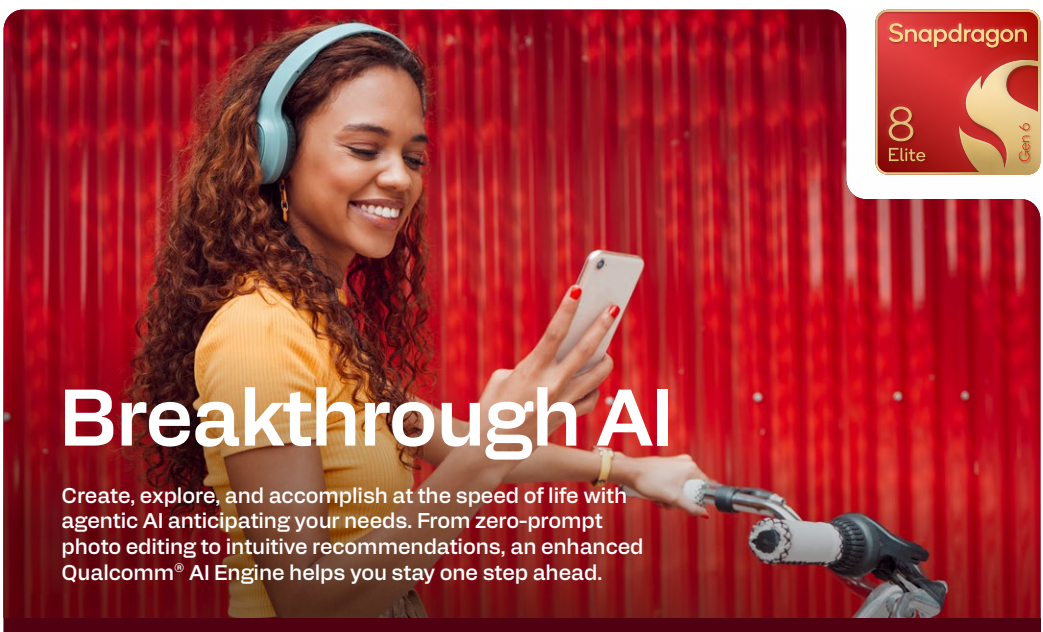
14% improved NPU performance

37% improved CPU power efficiency

40% improved GPU power efficiency

20% improved AI performance-per-watt

All comparisons made are in reference to previous generation, Snapdragon 8 Elite Gen 5 Mobile Platform. Results will vary, depending on OEM implementation and other factors.



Breakthrough AI

Create, explore, and accomplish at the speed of life with agentic AI anticipating your needs. From zero-prompt photo editing to intuitive recommendations, an enhanced Qualcomm® AI Engine helps you stay one step ahead.

Proactive and protected

Get what you want when you want it—with zero prompts. Agentic AI preemptively provides support based on your on-device behavior, all while helping to keep your data safe and secure. Powered by the low-power Qualcomm® Sensing Hub, Qualcomm® Hexagon™ NPU, and Qualcomm Oryon™ CPU working together, it can understand your intent, access your personal context, map out a plan, and coordinate tasks across apps.

Smarter every day

On-device learning helps your agentic workflows evolve with you, adapting to how you edit photos, write messages, and personalize visual experiences. Using the new GPU and NPU, your favorite filters, preferred crops, time-of-day camera settings, and writing tone continue to get more personalized, so the next edit, reply, or face effect feels more like you before you even ask.

Next-level NPU

AI experiences run faster and smoother across the board, powered by a reengineered Hexagon NPU with up to 20% better performance-per-watt.

Intelligence in every pixel

Capture life as it unfolds with sharp, vivid footage, no matter how fast the moment moves. AI-powered features produce pro-grade photo and video results, with editing abilities down to the pixel.

- Intelligent Pixel Control understands the scene down to every pixel, so your shots are always keepers.
- **Elite Color Engine** brings cinema color science to your videos, reducing noise while enhancing color and light for richer, more refined memories.
- Motion intelligence anticipates movements to deliver industry-leading stabilization for smooth and steady footage—anywhere.

Cutting-edge gaming tools

Build, battle, and be victorious in the biggest games on mobile, with fast frame rates and smooth action powering your competitive advantage.

- Snapdragon supports the top AAA games, with the full Snapdragon Elite Gaming™ Suite empowering every win.
- Stay connected and competitive with system-wide optimizations and the Qualcomm Oryon CPU enabling low latency in multiplayer matches.
- Qualcomm® Game Quick Touch 3.0 slashes latency even further for instant reactions and seamless control when it matters most.

Sound that rises to every occasion

From video calls and gaming to your favorite tunes, every sound unfolds richly and precisely, no setup or adjustments required.

- Effortlessly remix recorded audio with agentic AI boosting voices and reducing background noise.
- **AI Voice Bubble** isolates your voice in noisy environments, keeping you front-and-center on calls and videos.
- Qualcomm® Spatial Audio Renderer anchors sound positioning, even as you move and turn your head, now with improved power efficiency and reduced latency.

AI-enhanced connectivity

Stay one step ahead with intelligent connectivity engineered for fast speeds, reliable experiences, and seamless switching.

- The **AI-powered Qualcomm® X105 5G Modem-RF** is newly architected for greater uplink and downlink speeds, coverage, and better power efficiency, the first AI-powered connectivity system to support 3GPP Release 19 5G Advanced, laying the foundation to 6G.
- The 3rd Gen multi-antenna (6Rx) AI-based solution packs six antennas to capture multiple data streams at once, while upping download speeds by 10%, improving cell-edge reception, and reducing dropped connections.
- Qualcomm X105 5G Modem-RF helps accelerate satellite connectivity for 5G devices, with an integrated 5G NR over satellite solution, NR-NTN for voice, video, and data, NB-NTN for messaging, and RFFE compatibility.
- **Qualcomm® FastConnect™ 8800** Mobile Connectivity System built to support the latest Wi-Fi 8*, Bluetooth, Ultra Wideband, and Thread—loaded with proximity AI capabilities, from locating lost items to seamless key card access. It's redesigned with a 4x4 Wi-Fi system for double the peak speeds and up to 3x longer gigabit range compared to previous generations.**

Specs spotlight

Artificial Intelligence
- Reengineered Hexagon NPU
- Low-power personal context on Sensing Hub

CPU
- Custom-built Qualcomm Oryon CPU
- 2 prime cores, up to 5 GHz

GPU
- Adreno GPU
- Qualcomm Game Quick Touch 3.0

Camera
- Intelligent Pixel Control
- Motion Intelligence

5G
- Qualcomm X105 Modem-RF System
- Peak download speeds up to 14.8 Gbps

Wi-Fi
- FastConnect 8800
- Peak download speeds up to 11.6 Gbps

* Available for select Android versions
** Provided 4x4 system architecture, 320 MHz, RF FEMs, and Wi-Fi 8 ELR. Testing in internal labs through iperf at 1 Gbps compared against prior generation 2x2 160 MHz products.
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Specs and features

Artificial Intelligence

Qualcomm® AI Engine

Qualcomm® Adreno™ GPU with matrix cores

Qualcomm Oryon™ CPU with hardware-based AI acceleration

Qualcomm® Hexagon™ NPU
- New Element Accelerator
- 12 scalar + 8 vector + 1 tensor + 1 element configuration
- Hexagon Direct Link
- Micro Tile Inferencing
- 64-bit memory virtualization
- Support for INT2, INT4, INT8, INT16, FP8, FP16 precisions, including mix precision

Qualcomm® Sensing Hub
- Dual Micro NPUs for audio, voice, and sensors for creating personal knowledge graphs
- Dual Always-Sensing ISPs to support two concurrent always-sensing cameras
- Qualcomm® Personal Scribe

AI software
- Qualcomm AI Stack

5G Modem-RF System

Qualcomm® X105 5G Modem-RF
- 5G Advanced, 5G mmWave, and sub-6 GHz, 5G standalone (SA) and non-standalone (NSA) modes, standalone mmWave and mmWave-sub-6 dual connectivity, FDD, TDD

Downlink: Up to 14.8 Gbps

Uplink: Up to 4.2 Gbps

- mmWave: 8 carriers, 2x2 MIMO
- Sub-6 GHz: 4x6 MIMO
- 6nm node (mmWave-sub-6) transceiver with 30% lower power consumption
- Integrated quad-band GNSS support across L1, L2, L5, and L6
- 5th Gen Qualcomm® 5G AI Processor
- Qualcomm 5G PowerSave
- Fully integrated NB-NTN and NR-NTN support
- Qualcomm® Smart Transmit™ Plus with enhanced uplink support
- 6-antenna (6Rx) support for smartphones
- 6xCA with 500 MHz bandwidth for downlink
- 1024 QAM sub-6 GHz support
- Switched uplink with Rel-17 (FDD/TDD)
- Supplemental uplink
- Uplink 4-layer carrier aggregation (200 MHz)—UL MIMO
- Qualcomm® QTM565 mmWave module
- Global 5G multi-SIM, including Qualcomm® Turbo DSDA with 3CC + 1CC carriers support for higher throughput

- 3GPP Release 19 hardware

- NB-IoT for extended coverage
- Supports all major global 5G bands, from 0.6 to 41 GHz

Wi-Fi, Bluetooth, UWB, & Thread

Qualcomm® FastConnect™ 8800 Mobile Connectivity System
- Peak Speed: 11.6 Gbps
- 802.11bn, 802.11be, 802.11ax, 802.11ac, 802.11a/b/g/n
- AI-enhanced Wi-Fi
- High Band Simultaneous (HBS) Multi-Link

Integrated Bluetooth
- Bluetooth® 6.3 wireless technology, LE Audio, Bluetooth Channel Sounding, Bluetooth High Data Throughput (HDT)

Integrated Ultra Wideband (UWB)
- IEEE 802.15.4z, FiRA, CCC, CSA Aliro 1.0

Thread
- Standards: 1.4

Audio

Snapdragon Sound™ Technology Suite
- Qualcomm® aptX™ Adaptive and aptX Lossless audio
- Qualcomm® Expanded Personal Area Network (XPAN) technology
- Qualcomm Aqstic™ audio codec
- Qualcomm Aqstic smart speaker amplifier: Total Harmonic Distortion + Noise (THD+N)
- Playback: -108 dB
- Qualcomm Aqstic Speaker Max
- Qualcomm® Audio and Voice Communication Suite
- Qualcomm® Spatial Audio Renderer with head-tracking

Display

On-Device Display Support
- 4K+ @ 120 Hz
- QHD+ @ 240 Hz

Maximum External Display Support
- Up to 4K @ 120 Hz
- Up to 8K @ 30 Hz

Scaling and Detail Enhancement
- HDR10, HDR10+, HDR vivid, and Dolby Vision HDR
- Display Uniformity Correction
- Display Aging Compensation

CPU

Custom-built Qualcomm Oryon CPU
- 2 Prime cores, up to 5.0 GHz
- 6 Performance cores, up to 4.0 GHz
- 16 MB Qualcomm Oryon Flex Cache
- 64-bit architecture

Camera

Qualcomm Spectra™ Image Signal Processor

Triple 20-bit AI-ISPs

Elite Color Engine with real-time 3D-LUTs

Support for the latest HDR,16-bit LOFIC, DCG+VS, and DCG, Staggered, QDOL, Less Blanking, and Multi-Frame HDR image sensors with seamless switching between any HDR mode
- Up to 64MP triple camera with Zero Shutter Lag
- Up to 108 MP single camera with Zero Shutter Lag
- Up to 320MP photo capture

Snapdragon® Audio Sense

10-bit HEIF: HEIC photo capture

8K video capture @ 30 FPS

4K slow-motion video capture @ 120 FPS

1080p slow-motion video capture @ 960 FPS

Pro Sight video capture

Ultra-low light video capture in 4K60 with Bayer Noise Reduction and AI noise reduction in 4K30 FPS

Video super resolution

Bayer Massive Multi-Frame Noise Reduction with AI

AI video processing
- 16-bits of AI data per pixel
- Enhanced AI video segmentation @ 4K60 FPS
- Real-time AI skin and sky tone adjustments in 4K60 FPS

Visual Subsystem

Adreno GPU

Adreno high-performance memory architecture with support for Tile Memory Heap Unreal Engine 5 Advanced Optimizations
- Real-time Hardware-Accelerated Ray Tracing with Lumen Global Illumination
- Nanite Virtualized Geometry

Full Snapdragon Elite Gaming™ Feature Support

API support: Vulkan 1.4 (Khronos 2026, Android 17 profiles), OpenGL ES 3.2, OpenCL 3.0 FP

Hardware-accelerated H.265, VP9, AV1 decoder

HDR Playback Codec support for HDR10+, HDR10, HLG, and Dolby Vision

Security

Trust Management Engine (Root of Trust) with platform-level security foundations

Qualcomm® Trusted Execution Environment (TEE)

Qualcomm® Type-1 Hypervisor for isolation from the high-level OS

Secure Processing Unit (SPU)

Qualcomm® wireless edge services (WES)

Qualcomm® 3D Sonic Sensor and Qualcomm 3D Sonic Max (fingerprint sensor)

Secure C2PA AI provenance data support

Enhanced AI processing isolation and model protection

Location

Concurrent GPS, Glonass, BeiDou, Galileo, QZSS, NavIC

Triple frequency GNSS (L1/L2C/L5)

AI-based GNSS Location Gen 3

Sensor-Assisted Positioning 6.0

Urban pedestrian navigation with sidewalk accuracy

Global freeway lane-level vehicle navigation

Charging

Qualcomm® Quick Charge™ 5 Technology

Memory

Support for LP-DDR5x/6, up to 5300 MHz

Memory Density: Up to 24 GB

General Specifications

2nm Process Technology

USB Version 3.1 Gen 2; USB Type-C Support

Storage: UFS 5.0

Part Number: SM8950

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