The Snapdragon® 8+ Gen 1 Mobile Platform is our premium-tier powerhouse. New power and performance enhancements deliver the ultimate boost across all your on-device experiences.

Boosted power and performance

Watch, immerse, conquer, and create—all at once and for longer. The improved Qualcomm® Kryo™ CPU delivers faster, more efficient on-device cross-tasking, even when using robust apps. Browse the web or check in with social networks for over 50 minutes longer. Your favorite experiences are now extended, enhanced, and ever-seamless, all backed by advanced, power-saving processing.

- 10% faster CPU performance
- 30% CPU improved power efficiency
- Up to 3.2 GHz* peak CPU speeds

Amped-up gameplay—unleashed

Mobile gameplay reaches uncharted territory with the full suite of Snapdragon Elite Gaming™ features in your arsenal. Combined with our improved Qualcomm® Adreno™ GPU, experience flawless, real-time visuals that keep you fully immersed in the action. Plus, new power efficiencies enable gameplay for up to an hour longer, so you can outlast the competition.

- Up to 10% faster GPU clock speeds
- 30% GPU power reduction
- Volumetric Rendering adds unrivaled realism to graphics like fog and smoke
- HDR gaming with 10-bit color depth and Rec. 2020 color gamut

Unbeatable intelligence

The 7th Gen Qualcomm® AI Engine is our fastest and most advanced ever, providing intuitive, streamlined experiences across the board, including photography. When combined with camera, capture dynamic footage with simultaneous AI Bokeh effects and face tracking. No matter what mobile activity you choose, Snapdragon Smart works seamlessly to elevate every interaction.

- Up to 20% better performance/watt than predecessor
- 3rd Gen Qualcomm® Sensing Hub features a low-power AI system with new architecture for intelligent sensing experiences that won't affect battery life

Astonishing capture

Experience the brilliance of Snapdragon Sight™, packing our 18-bit triple ISP for jaw-dropping imagery, brimming with vivid color and clarity. Record 8K HDR video in over a billion radiant shades of color and snap up to 64 MP photos, simultaneously, with fine detail. Plus, harness mega low light capture for clear photos of nighttime settings—without all the noise.

- Triple 18-bit Qualcomm Spectra™ Image Signal Processor captures over 4,000x more camera data than the 14-bit ISP
- Mega low light capture snaps 30 images and merges the best parts into one shot for brighter, more visible photos after dark
- Staggering capture speeds up to 3.2 gigapixels per second

Full-throttle connectivity

Connect anywhere faster and for even longer with Snapdragon Connect technologies. Our 4th Gen Snapdragon X65 5G Modem-RF System delivers fiber-like speeds for blazing-fast movies and TV downloads plus video sharing. And our Qualcomm® FastConnect™ 6900 Mobile Connectivity System offers lightning-fast Wi-Fi for crisper video calls and responsive gaming.

- 5G speeds up to 10 Gbps with support for more networks, frequencies, and bandwidths globally
- Wi-Fi 6 / 6E speeds up to 3.6 Gbps
- Improved power provides over 5 ½ hours longer talk time and over 25 minutes longer 5G WeChat video calling

Premium sound

Snapdragon Sound™ Technology brings together our very best audio, connectivity, and mobile innovations to deliver high-resolution music, crystal-clear voice calls, and lag-free gaming—with superior connectivity and extended battery life. This is how sound should sound.

- Snapdragon Sound packs Qualcomm® aptX™ Lossless Technology and LE Audio with over 17 hours longer audio playback

Artificial Intelligence

Qualcomm® Adreno™ GPU

Qualcomm® Kryo™ CPU

Qualcomm® Hexagon™ Processor
- Fused AI Accelerator
  - Hexagon Tensor Accelerator
  - Hexagon Vector eXtensions
  - Hexagon Scalar Accelerator
- Support for mix precision(INT8+INT16)
- Support for all precisions (INT8, INT16, FP16)

Qualcomm® Sensing Hub

5G Modem-RF System

Snapdragon® X65 5G Modem-RF System
- 5G mmWave and sub-6 GHz, standalone
- (SA) and non-standalone (NSA) modes, FDD, TDD
- Dynamic Spectrum Sharing
- mmWave: 8 carriers, 2x2 MIMO
- Sub-6 GHz: 4x4 MIMO
- Qualcomm® 5G PowerSave 2.0
- Qualcomm® Smart Transmit™ 2.0 technology
- Qualcomm® Wideband Envelope Tracking
- Qualcomm® AI-Enhanced Signal Boost
- Global 5G multi-SIM

Downlink: Up to 10 Gbps

Multimode support: 5G NR, LTE including CBRS, WCDMA, HSPA, CDMA 1x, EV-DO, GSM/EDGE

Wi-Fi & Bluetooth®

Qualcomm® FastConnect™ 6900 System
- Wi-Fi Standards: Wi-Fi 6E, Wi-Fi 6 (802.11ax),
- Wi-Fi 5 (802.11ac), 802.11a/b/g/n
- Wi-Fi Spectral Bands: 2.4 GHz, 5 GHz, 6 GHz
- Peak speed: 3.6 Gbps
- Channel Bandwidth: 20/40/80/160 MHz
- 8-stream sounding (for 8x8 MU-MIMO)
- MIMO Configuration: 2x2 (2-stream)
- MU-MIMO (Uplink & Downlink)
- 4K QAM
- OFDMA (Uplink & Downlink)
- 4-Stream (2x2 + 2x2) Dual Band Simultaneous (DBS)
- Wi-Fi Security: WPA3-Enterprise, WPA3- Enhanced Open, WPA3 Easy Connect, WPA3-Personal

Integrated Bluetooth
- Bluetooth Features: Bluetooth® 5.3, LE Audio, Dual Bluetooth antennas
- Bluetooth audio: Snapdragon Sound™ Technology with support for Qualcomm® aptX™ Voice, aptX Lossless, aptX Adaptive, and LE audio

Camera

Qualcomm Spectra™ Image Signal Processor
- Triple 18-bit ISPs
- Up to 3.2 Gigapixels per Second computer vision ISP (CV-ISP)
- Up to 36 MP triple camera @ 30 FPS with Zero Shutter Lag
- Up to 64+36 MP dual camera @ 30 FPS with Zero Shutter Lag
- Up to 108 MP single camera @ 30 FPS with Zero Shutter Lag
- Up to 200 Megapixel Photo Capture

Rec. 2020 color gamut photo and video capture

Up to 10-bit color depth photo and video capture

8K HDR Video Capture + 64 MP Photo Capture

10-bit HEIF: HEIC photo capture, HEVC video capture

Video Capture Formats: HDR10+, HDR10, HLG, Dolby Vision

8K HDR Video Capture @ 30 FPS

4K Video Capture @ 120 FPS

Slow-mo video capture at 720p @ 960 FPS

Bokeh Engine for Video Capture

Video super resolution

Multi-frame Noise Reduction (MFNR)

Locally Motion Compensated Temporal Filtering

Multi-Frame and triple exposure staggered/digital overlap HDR dual-sensor support

AI-based face detection, auto-focus, and auto-exposure

Audio

Qualcomm Aqstic™ audio codec (WCD9385)

New Qualcomm Aqstic smart speaker amplifier (WSA8835)

Total Harmonic Distortion + Noise (THD+N), Playback: -108dB

Qualcomm® Audio and Voice Communication Suite

Display

On-Device Display Support:
- 4K @ 60 Hz
- QHD+ @ 144 Hz

Maximum External Display Support: up to 4K @ 60 Hz
- 10-bit color depth, Rec. 2020 color gamut
- HDR10 and HDR10+

Demura and subpixel rendering for OLED Uniformity

CPU

Kryo CPU
- Up to 3.2 GHz*, with Arm Cortex-X2 technology
- 64-bit Architecture

Visual Subsystem

Adreno GPU
- Vulkan® 1.1 API support
- HDR gaming (10-bit color depth, Rec. 2020 color gamut)
- Physically Based Rendering
- Volumetric Rendering
- Adreno Frame Motion Engine
- API Support: OpenGL® ES 3.2, OpenCL™ 2.0 FP, Vulkan 1.1
- Hardware-accelerated H.265 and VP9 decoder
- HDR Playback Codec support for HDR10+, HDR10, HLG and Dolby Vision

Security

Platform Security Foundations, Trusted Execution Environment & Services, Secure Processing Unit (SPU)

Trust Management Engine

Qualcomm® wireless edge services (WES) and premium security features

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

Qualcomm® Type-1 Hypervisor

Charging

Qualcomm® Quick Charge™ 5 Technology

Location

GPS, Glonass, BeiDou, Galileo, QZSS, NavIC capable

Dual Frequency GNSS (L1/L5)

Sensor-Assisted Positioning
- Urban pedestrian navigation with sidewalk accuracy
- Global freeway lane-level vehicle navigation

Memory

Support for LP-DDR5 memory up to 3200 MHz

Memory Density: up to 16 GB

General Specifications

Full Suite of Snapdragon Elite Gaming™ features

4 nm Process Technology

USB Version 3.1; USB Type-C Support

Part Number: SM8475