The Snapdragon® 8 Gen 1 Mobile Platform delivers groundbreaking innovations in AI, photography, gaming, and connectivity—for the premium experiences your devices deserve.

Snapdragon Sight

Introducing Snapdragon Sight™ Technology, the new collection of premium camera features and technologies including our first-ever 18-bit ISP. Capture photos and videos in extreme dynamic range with vivid color and clarity. Record astonishing detail in over a billion shades with first-in-mobile 8K HDR video capture. Plus, mega low light capture snaps 30 images and merges the best parts into one shot for brighter, clearer, more colorful photos after dark.

· The 18-bit ISP captures over 4,000x more camera data than the 14-bit predecessor
· Staggering capture speeds up to 3.2 gigapixels per second
· 8K HDR Video Capture

AI for everything and everyone

The 7th Gen Qualcomm® AI Engine is our fastest, most advanced—ever. Use AI to capture depth-defying images with Leica's Leitz Look mode (recreating their legendary bokeh), or analyze and intelligently group and prioritize your notifications with natural language processing from Hugging Face. Plus, monitor your wellbeing with intelligent vocal analysis with Sonde Health.

· Up to 4x faster than our predecessor—fastest performance
· 2x larger shared memory plus a 2x faster tensor accelerator— best performance-per-watt in Snapdragon history
· 3rd Gen Qualcomm® Sensing Hub featuring a newly architected low-power AI system

When winning matters most

Experience gameplay that transports you into new realms of authenticity. Volumetric rendering adds unrivaled realism to graphics like fog and smoke, while support for the Unreal Engine 5 unleashes advanced lighting and shadow effects for breathtaking sequences. Plus, the Adreno Frame Motion Engine efficiently raises FPS for smooth, stunning action that lasts.

· Full suite of Snapdragon Elite Gaming™ Features
· Qualcomm® Adreno™ GPU delivers 30% faster graphics rendering and increases power efficiency by 25%
· First Snapdragon platform with Audiokinetic technology produces immersive, console-quality sound

The next 5G era—unleashed

This is our most advanced 5G platform ever. Our 4th Gen Snapdragon X65 5G Modem-RF System offers unparalleled speeds and supports more networks, frequencies, and bandwidths globally—plus support for all-day battery life. Download content in seconds, stream without a hitch, get an edge in your favorite mobile game, or follow GPS in more places than ever before. Connectivity has never been this instantaneous or accessible.

· World's first 10-Gigabit 5G Modem-RF solution
· World's first 3GPP Release 16 5G solution
· World's first 5G uplink carrier aggregation for unprecedented upload speeds

Industry-leading Wi-Fi 6, 6E and Bluetooth audio

Our Qualcomm® FastConnect™ 6900 Mobile Connectivity System offers the mobile industry's fastest, most responsive Wi-Fi available. Outsmart the enemy with real-time gameplay, enjoy rich and responsive video calls, smoothly stream or share HD content. Plus, the FastConnect 6900 supports unparalleled Bluetooth audio with Snapdragon Sound™ Technology for rich, immersive, in-sync voice and music—as well as all-new LE audio implementations for all-new listening scenarios.

· Most advanced Wi-Fi 6 and 6E system with leading speeds up to 3.6 Gbps
· Supports Snapdragon Sound with Qualcomm® aptX™ Lossless Technology for CD-quality lossless wireless audio
· First Snapdragon to support LE Audio innovations such as broadcast audio, stereo recording for content creators, and voice back-channel for gaming

Snapdragon
8 mobile platform Gen 1

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: 1000 MHz bandwidth, 8 carriers, 2x2 MIMO
- Sub-6 GHz: 300 MHz bandwidth, 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, TD-SCDMA, 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)
- Dual-band simultaneous (2x2 + 2x2)
- Wi-Fi Security: WPA3-Enterprise, WPA3- Enhanced Open, WPA3 Easy Connect, WPA3-Personal

Integrated Bluetooth
- Bluetooth Features: Bluetooth 5.2, 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 3.0 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: SM8450

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