# Qualcomm
## snapdragon
### 865+ 5G mobile platform

865+

The Qualcomm® Snapdragon™ 865+ 5G mobile platform delivers revved-up performance for insanely-fast, superior gameplay. Truly global 5G, ultra-intuitive AI, game-changing Wi-Fi, and a full suite of Qualcomm® Snapdragon Elite Gaming™ features complete this unstoppable platform.

## Superior gameplay

Defend, dominate, and defeat with Snapdragon's most advanced gaming arsenal. A boosted GPU, 5G connectivity, and Snapdragon Elite Gaming features break mobile barriers in cloud-based gameplay and desktop-quality visuals. Get the latest tech gains with updateable GPU drivers, plus experience phenomenal graphics with 144 Hz display support and accelerated rendering.

- Qualcomm® Adreno™ 650 GPU packs a 10% faster graphics rendering compared to Snapdragon 865
- Full suite of Snapdragon Elite Gaming features, including Desktop Forward Rendering, Qualcomm® Game Color Plus, True 10-bit HDR Gaming, and Qualcomm® Game Smoother

## Revved-up performance

Conquer continually, without compromise. Our amplified Qualcomm® Kryo™ CPU enables high-intensity gaming at utmost efficiency, so you can focus on prevailing instead of powering up. And, Qualcomm® Quick Charge™ AI Technology monitors battery health for prolonged performance. Play at breakneck speeds—no breaks required.

- Kryo 585 CPU boasts a 10% performance improvement compared to Snapdragon 865
- Quick Charge AI helps to extend battery life cycles up to 200 days

## Truly global 5G gaming

Take advantage of lightning-fast, multi-gigabit 5G gaming and defeat foes from around the world. Compete with multiple players in real-time, and stream PC-quality games right to your device. With peak 5G speeds up to 7.5 Gbps, make every move seamless and every warrior a winner.

- Snapdragon X55 5G Modem-RF System
- Supports all key regions and frequency bands including mmWave, sub-6, TDD, FDD and Dynamic Spectrum Sharing (DSS)
- Supports both standalone and non-standalone modes, global roaming and global multi-SIM

## Ultra-intuitive AI

Our leading 5th gen Qualcomm® Artificial Intelligence (AI) Engine lets you outsmart the competition with more intuitive moves. AI real-time translation eliminates language barriers for seamless communication with global teammates. This platform's combined speed, strength, and smarts enable super-responsive gameplay—all without draining power.

- Qualcomm® Hexagon 698 Processor
- Qualcomm® Sensing Hub provides always-on contextual awareness while gaming
- AI-based noise suppression & echo cancellation for in-game communication

## Game-changing Wi-Fi

The Snapdragon 865+ 5G mobile platform makes connectivity history with Qualcomm® FastConnect™ 6900 System compatibility, featuring the fastest mobile Wi-Fi in the industry at up to 3.6 Gbps. By harnessing the 6 GHz spectrum, Wi-Fi 6E is less congested, insanely-fast, and shockingly smooth. Experience VR-class low latency for highly responsive mobile gaming and XR applications, even in crowded places with many devices competing for data.

- 4-stream (2x2 + 2x2) Dual Band Simultaneous (DBS) implementation for faster, more responsive connectivity
- Qualcomm® 4K QAM and 160 MHz channel support for enhanced gaming and HD streaming
- Integrated Bluetooth 5.2 and advanced audio features for crisp, reliable and responsive wireless audio

To learn more visit
**snapdragon.com**

# 865+ 5G Mobile Platform

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## SPECIFICATIONS & FEATURES

### Artificial Intelligence

- Adreno 650 GPU
- Kryo 585 CPU
- Hexagon 698 Processor
  - Hexagon Tensor Accelerator
  - Hexagon Vector eXtensions
  - Hexagon Scalar Accelerator
- Qualcomm Sensing Hub
  - Ultra low power hub for audio, voice and sensors
  - Supports AI algorithms at low power
  - Support for fusing contextual data streams including sensors, audio and voice
  - Supports multiple voice assistants
  - Multi-mic far-field detection and echo cancellation

### 5G Modem-RF System

- Snapdragon X55 5G Modem-RF System
- 5G mmWave and sub-6 GHz, standalone (SA) and non-standalone (NSA) modes, FDD, TDD
- Dynamic Spectrum Sharing
- mmWave: 800 MHz bandwidth, 8 carriers, 2x2 MIMO
- Sub-6 GHz: 200 MHz bandwidth, 4x4 MIMO
- Qualcomm® 5G PowerSave
- Qualcomm® Smart Transmit™ technology
- Qualcomm® Wideband Envelope Tracking
- Qualcomm® Signal Boost adaptive antenna tuning
- Global 5G multi-SIM
- Downlink: Up to 7.5 Gbps
- Uplink: Up to 3 Gbps
- Multimode support: 5G NR, LTE including CBRS, WCDMA, HSPA, TD-SCDMA, CDMA 1x, EV-DO, GSM/EDGE

### Wi-Fi & Bluetooth

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

- Integrated Bluetooth
  - Bluetooth Version: Bluetooth 5.2
  - Bluetooth features: LE Audio Features (one-to-many broadcast, audio sharing), Dual Bluetooth antennas
  - Bluetooth audio: Qualcomm® aptX™ Voice audio for super wide band voice calls, Qualcomm® aptX™ Adaptive audio for robust, low latency, high quality audio, Qualcomm TrueWireless™ Technology

### Camera

- Qualcomm Spectra™ 480 Image Signal Processor
- Dual 14-bit ISPs
- Up to 2 Gigapixels per Second
- Hardware accelerator for computer vision (CV-ISP)
- Up to 200 Megapixel Photo Capture
- Up to 25 MP dual camera @ 30 FPS with Zero Shutter Lag
- Up to 64 MP single camera @ 30 FPS with Zero Shutter Lag
- Rec. 2020 color gamut video capture
- Up to 10-bit color depth video capture
- 4K Video Capture + 64 MP Photo
- 8K Video Capture @ 30 FPS
- Slow-mo video capture at 720p @ 960 FPS
- HEIF: HEIC photo capture, HEVC video capture
- Video Capture Formats: HDR10+, HDR10, HLG, Dolby Vision
- 4K Video Capture @ 120 FPS
- 4K HDR Video Capture with Portrait Mode (Bokeh)
- Multi-frame Noise Reduction (MFNR)
- Real-time object classification, segmentation and replacement

### Audio

- Hexagon Voice Assistant Accelerator for hardware accelerated voice signal processing
- Qualcomm Aqstic™ audio codec (Up to WCD9385)
  - Total Harmonic Distortion + Noise (THD+N), Playback: -108dB
  - Native DSD support, PCM up to 384 kHz/32-bit
  - Customizable "Golden Ears" filter
- Qualcomm Aqstic smart speaker amplifier (up to WSA8815)

### 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+ CPU

### CPU

- Kryo 585, Octa-core
- Up to 3.1 GHz
- 64-bit Architecture

### Visual Subsystem

- Adreno 650 GPU
- Vulkan® 1.1 API support
- HDR gaming (10-bit color depth, Rec. 2020 color gamut)
- Physically Based Rendering
- 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

- Qualcomm® Secure Processing Unit: Mobile Payment, Dual SIM/ Dual Standby
- Qualcomm® 3D Sonic Sensor and Qualcomm 3D Sonic Max
- Biometric Authentication: Fingerprint, Iris, Voice, Face
- On-Device: Qualcomm® Mobile Security, Key Provisioning Security, Qualcomm® Processor Security, Qualcomm® Content Protection, Qualcomm® Trusted Execution Environment, Camera Security, Crypto Engine, Malware Protection, Secure Boot, Secure Token

### Charging

- Quick Charge 4+ technology
- Quick Charge AI

### Location

- GPS, Glonass, BeiDou, Galileo, QZSS, NavIC capable, and SBAS
- Dual Frequency Support
- Low Power Geofencing and Tracking, Sensor-assisted Navigation
- Near Field Communications (NFC): Supported

### Memory

- Support for LP-DDR5 memory up to 2750 MHz
- Support for LPDDR4x memory up to 2133 MHz
- Memory Density: up to 16 GB

### General Specifications

- Full Suite Snapdragon Elite Gaming features
- 7 nm Process Technology
- USB Version 3.1; USB Type-C Support
- Part Number: SM8250-AB