



Qualcomm®  
Snapdragon™

855

Mobile Platform

Qualcomm® Snapdragon™ 855 Mobile Platform is the first mobile platform to collectively commercialize 5G, AI and XR, ushering in a new decade of revolutionary experiences. It's the premier mobile platform for a bold new era.



### Multi-gigabit everything

The world's first commercial 5G mobile platform unleashes transformative 5G experiences with the Snapdragon™ X50 5G modem while harnessing multi-gigabit 4G connectivity. Combined with a new era of Wi-Fi performance, this is innovation for the next generation.

- Multi-gigabit 5G, 4G LTE and Wi-Fi
- Support for mmWave and sub-6 GHz
- Up to 20x sustained performance leap compared to 4G



### Powerful, intuitive experiences

Snapdragon 855 is powered by new architecture improvements and leading 7nm process technology, a giant leap in CPU smartphone performance, and a Qualcomm® Hexagon™ Processor that's purpose-built for AI. This platform packs unimaginable performance and power efficiency for the next echelon of 5G, AI and XR – all while providing what matters most: insane battery life.

- Qualcomm® Kryo™ 485 CPU provides up to a 45% uplift in performance
- Continuous 4K HDR capture thanks to a 30% improvement in energy efficiency
- Qualcomm® Hexagon™ 690 DSP featuring 2x Vector accelerator increase in performance and a new Tensor accelerator



### AI to the 4th Power

Our 4th generation on-device AI engine is the ultimate personal assistant for camera, voice, XR and gaming – delivering smarter, faster and more secure experiences. Utilizing all cores, it packs 3 times the power of its predecessor for stellar on-device AI capabilities.

- Built with enhanced architectures geared towards AI
- Greater than 7 trillion operations per second (TOPS)
- Three times improvement over all cores



### Cinema-grade videography

From bleeding-edge color to a new evolution of cinema-grade videography, this platform sets brilliant new standards for mobile – including the world's first Computer Vision (CV-ISP) delivering 4K HDR video capture with Portrait Mode.

- World's first HDR10+ video capture
- Real-time object segmentation
- First Snapdragon mobile platform with HEIF saves photos, videos, and computer vision data at half the size



### Incredibly captivating entertainment

Go big, even when you're not at home. With 4K HDR video playback, your motion pictures will be brilliant, scene-by-scene and frame-by-frame. 5G makes XR real time, so fully immersive interactions happen at the speed of life. Plus, Snapdragon Elite Gaming equates to multi-player experiences that mimic human reflex. Game on.

- First true HDR gaming on mobile, providing over 1 billion shades of color
- Qualcomm® Adreno™ 640 GPU delivers up to 20% faster graphics rendering
- Qualcomm® aptX™ Adaptive and Qualcomm Aqstic™ deliver a smooth, crystal-clear audio experience

To learn more visit  
[snapdragon.com](https://www.qualcomm.com/snapdragon)

All comparisons made are in reference to previous generation, Snapdragon 845 mobile platform. Results will vary depending on OEM implementation and other factors.

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# Qualcomm® Snapdragon™ 855 Mobile Platform

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## SPECIFICATIONS & FEATURES

### Qualcomm® Artificial Intelligence Engine

- Qualcomm® Hexagon™ 690 Processor
- Qualcomm® Hexagon™ Vector Accelerator
- Qualcomm® Hexagon™ Tensor Accelerator
- Qualcomm® Hexagon™ Voice Assistant
- Qualcomm® All-Ways Aware™ Hub
- Qualcomm® Adreno™ 640 GPU
- Qualcomm® Kryo™ 485 CPU

### 5G Modem

- Snapdragon™ X50 5G Modem
- Supported Technologies: 5G NR
- Support for sub-6 GHz and mmWave
- Supported Spectrum:
  - mmWave: 800 MHz bandwidth, 2x2 MIMO
  - Sub-6 GHz: 100 MHz bandwidth, 4x4 MIMO

### 4G Modem

- Snapdragon™ X24 LTE modem
- Cellular Technologies: LTE FDD, LTE TDD including CBRS support, LAA, LTE Broadcast, WCDMA, TD-SCDMA, CDMA 1x, EV-DO, GSM/EDGE
- Downlink: LTE Cat 20 up to 2.0 Gbps, 7x20 MHz carrier aggregation, 256-QAM, 4x4 MIMO on five carriers
- Uplink: LTE Cat 13 up to 318 Mbps, 3x20 MHz carrier aggregation, 256-QAM, Uplink Data Compression
- Multi SIM with support for Dual SIM Dual VoLTE (DSDV) and LTE Dual SIM Dual Standby (DSDS) +LAA
- Next-generation Calling Services including VoLTE with SRVCC to 3G and 2G, HD and Ultra HD Voice (EVS), and CSFB to 3G and 2G

### Wi-Fi

- Qualcomm® Wi-Fi 6-ready mobile platform
  - Wi-Fi Standards: 802.11ax-ready, 802.11ac Wave 2, 802.11a/b/g, 802.11n
  - Wi-Fi Spectral Bands: 2.4 GHz, 5 GHz
  - Channel Utilization: 20/40/80 MHz
  - MIMO Configuration: 2x2 (2-stream)
  - MU-MIMO
  - Dual-band simultaneous (DBS)
  - Key Features: 8x8 sounding (up to 2x improvement over 4x4 sounding devices), Target Wakeup Time for up to 67% better power efficiency, latest security with WPA3
- Qualcomm® 60 GHz Wi-Fi mobile platform
  - Wi-Fi Standards: 802.11ad, 802.11ay
  - Wi-Fi Spectral Band: 60 GHz
  - Peak speed: 10 Gbps

- Key Features: multi-gigabit speeds, wire-equivalent latency, always-on ambient Wi-Fi sensing

### Camera

- Qualcomm® Spectra™ 380 Image Sensor Processor
- Dual 14-bit ISPs
- Hardware accelerator for computer vision (CV-ISP)
- Up to 20 MP dual camera
- Up to 32 MP single camera
- Rec. 2020 color gamut video capture
- Up to 10-bit color depth video capture
- Slow motion video capture at 720p HDR, 480fps
- HEIF photo capture, HEVC video capture
- Video Capture Formats: HDR10+, HDR10, HLG
- 4K HDR Video Capture with Portrait Mode (Bokeh)
- Multi-frame Noise Reduction (MFNR)
- Real-time object classification, segmentation and replacement

### Audio

- Low-power Audio Subsystem with AI
- Hexagon Voice Assistant Accelerator for advanced voice use cases
- Qualcomm Aqstic™ Audio Technology
  - Native DSD support, PCM up to 384 kHz/32-bit
  - Supports two wake words simultaneously (Google Assistant, Amazon Alexa, Baidu, Cortana)
- Always-on echo cancellation and noise suppression; up to 4 mic far-field mic support for better voice recognition in tough conditions
- Qualcomm® aptX™ Adaptive audio technology
  - aptX Adaptive adjusts performance for optimum quality, latency, and efficiency
- Qualcomm TrueWireless™ Stereo Plus technology

### Display

- Maximum On-Device Display Support: Up to 4K HDR
- Maximum External Display Support: Up to two 4K HDR displays
- 10-bit color depth, Rec. 2020 color gamut

### CPU

- 8x Qualcomm® Kryo™ 485
- Up to 2.84 GHz
- 64-bit Architecture
- 7nm Process Technology

### Visual Subsystem

- Adreno 640 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
- Volumetric VR video playback
- 8K 360 VR video playback

### RF Front-End

- Comprehensive 5G/4G modem-to-antenna solution
- QTM052 5G mmWave antenna module
- Qualcomm Adaptive Antenna Tuning
- Qualcomm Envelope Tracking
- High-power transmit (HPUE)

### Security

- Secure Processing Unit featuring mobile payments and Qualcomm® 3D Sonic Sensor
- 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

### Memory

- Memory Speed: 2133 MHz
- Memory Type: 4x16-bit, LPDDR4x
- Memory Density: up to 16 GB

### Connectivity Specifications

- Bluetooth Version: 5.0
- Bluetooth Speed: 2 Mbps
- Satellite Systems Support: Dual frequency GNSS, GPS, GLONASS, Beidou, Galileo, QZSS, SBAS
- Near Field Communications (NFC): Supported
- USB Version 3.1; USB Type-C Support

### Charging

- Qualcomm® Quick Charge™ 4+ technology

Certain optional features available subject to Carrier and OEM selection for an additional fee.

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