Qualcomm
snapdragon
678 mobile platform

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The Qualcomm® Snapdragon™ 678 Mobile Platform is designed to deliver reliable performance for dynamic entertainment experiences. A boost in both CPU and GPU provides improved gaming, photography, streaming, and more. Plus, experience it all at lightning-fast speeds with impressive connectivity.

Boosted on-device performance

Key performance upgrades empower you to game, stream, or capture in high quality. Our improved Qualcomm® Kryo™ 460 CPU and Qualcomm® Adreno™ 612 GPU enable faster, more robust on-device interactions. Plus, with Qualcomm® Quick Charge™ 4+ technology, you'll be back to your favorite activities in a flash.

- Qualcomm® Hexagon™ 685 DSP with Qualcomm® Hexagon™ Vector eXtensions (HVX) boosts processing with impressive efficiency
- Kryo CPU boasts speeds up to 2.2 GHz
- Sensor low-power island (LPI) provides always-on AI awareness and assistance

Dynamic photography and videography

Capture every occasion, experience, and adventure in share-worthy detail thanks to our Qualcomm Spectra™ 250L ISP. Snap pictures in up to 192 MP, or create unique content with HD slo-mo recording, 5x optical zoom, and portrait mode. Plus, the Hexagon 685 DSP produces better, brighter imagery without draining power.

- Dual-camera support up to 16 MP
- 3rd Gen Qualcomm® Artificial Intelligence (AI) Engine enables smarter photography experiences

Immersive entertainment, at your fingertips

Rich entertainment value awaits gamers, movie buffs, and audiophiles alike. Live to compete with a platform optimized for popular mobile games—or stream and download seamlessly thanks to our super-fast Snapdragon X12 LTE Modem. Plus, Qualcomm Aqstic™ Audio Technologies bring your favorite content to life with clear, realistic sound.

- The boosted Kryo 460 CPU and Adreno 612 GPU make gaming smooth and responsive
- Optimized for Unity, Messiah, NeoX, and Unreal Engine 4
- Qualcomm® aptX™ Audio delivers rich, seamless Bluetooth audio

Quality connections

Follow GPS, stream videos, or download music in real time with the Snapdragon X12 LTE Modem—pushing super-fast upload and download speeds, plus rapid response times. This modem delivers the best of both worlds, engineered to switch seamlessly between LTE and Wi-Fi for the strongest signal available. No more sluggish connections, even in congested areas.

- Supports advanced carrier aggregation for impressive peak speeds, with downloads up to 600 Mbps and uploads up to 150 Mbps

To learn more visit
snapdragon.com

SPECIFICATIONS & FEATURES

Qualcomm AI Engine

- Adreno 612 GPU
- Kryo 460 CPU
- Hexagon 685 Processor
  - Hexagon Vector eXtensions (HVX)
- Sensor low-power island (LPI)
- Qualcomm® Neural Processing SDK

Modem

- Snapdragon X12 LTE Modem
- Support for 600 Mbps LTE
- Downlink: LTE Cat 15 up to 600 Mbps, 3 x 20 MHz carrier aggregation, up to 256-QAM
- Uplink: LTE Cat 13 up to 150 Mbps, 2 x 20 MHz carrier aggregation, up to 64-QAM
- Dual SIM Dual VoLTE (DSDV)
- Support for all major cellular modes plus LAA. Support for:
  - VoLTE with SRVCC to 3G and 2G, HD and Ultra HD Voice (EVS), CSFB to 3G and 2G
  - Voice over Wi-Fi (VoWiFi) with LTE call continuity

Wi-Fi & Bluetooth

- Qualcomm® Wi-Fi Technology
- Qualcomm Wi-Fi integrated 802.11ac 1x1 MU-MIMO
- Tri-band Wi-Fi: 2.4 GHz and 5 GHz
- 11k/r/v: Enhanced mobility, fast acquisition and congestion mitigation for Carrier Wi-Fi
- Qualcomm TrueWireless™ Stereo
  - Bluetooth 5.0 with proprietary enhancements for:
    - Ultra-low power wireless ear buds
    - Direct audio broadcast to multiple devices

Camera

- Qualcomm Spectra 250L Image Signal Processor
- 14-bit image signal processing
- Dual camera: up to 16 MP, MFNR, ZSL, 30 fps
- Single camera: up to 25 MP, MFNR, ZSL, 30 fps
- Single camera: up to 48 MP, MFNR
- Single camera: up to 192 MP
- Video capture:
  - Standard: up to 2160p at 30 fps
  - Slow motion: up to 1080p at 120 fps or 720p at 240 fps
  - HEVC video capture
- Can connect up to 6 different cameras (many configurations possible)
- Multi-frame Noise Reduction (MFNR) with accelerated image stabilization
- Hybrid Autofocus with support for dual phase detection (2PD) sensors
- Ultra HD video capture (4K at 30 fps) with Motion Compensated Temporal Filtering (MCTF)

Audio

- Qualcomm Aqstic audio codec and Qualcomm Aqstic smart speaker amplifier
  - Up to native DSD support, PCM up to 384 kHz/32-bit
- aptX audio playback with support for aptX Classic and HD
- Far-field mic support
- Voice activation with machine learning algorithms
- Car mode

CPU

- Kryo 460, Octa-core CPU
- Up to 2.2 GHz
- 11nm Process Technology

Visual Subsystem

- Adreno 612 GPU
- 4K video playback
- H.264 (AVC), H.265 (HEVC), VP8 and VP9 playback
- FHD+ @ 60 Hz display
- DisplayPort over USB Type-C support
- API Support: OpenGL ES 3.2, OpenCL™ 2.0, Vulkan, DirectX 12

RF Front-End

- Qualcomm® Signal Boost adaptive antenna tuning
- High-power transmit (HPUE)
- On-Device: Qualcomm® Mobile Security, Qualcomm® Processor Security, Qualcomm® Content Protection

General Specifications

- Memory Speed: up to 1866 MHz, 8 GB RAM
- Memory type: 2 x 16-bit LPDDR4/4x
- GPS, Glonass, BeiDou, Galileo, QZSS, and SBAS
- Low Power Geofencing and Tracking, Sensor-assisted Navigation
- Quick Charge 4+ technology
- Part number: SM6150-AC