QUALCOMM® SNAPDRAGON™

821

PROCESSOR

Enabling a more immersive, intuitive and connected experience

The Snapdragon 821 mobile processor offers many advantages:

+ X12 LTE: Industry leading connectivity with LTE download speeds of up to 600 Mbps, multi-gigabit 802.11ad, and 2x2 802.11ac Wi-Fi

+ Qualcomm® Kryo™ CPU: Delivering maximum performance and low power consumption, Kryo is QTI's first custom 64-bit quad-core CPU, manufactured in advanced 14nm FinFET LPP process

+ Qualcomm® Adreno™ 530 GPU: Up to 40% better graphics and compute performance for improved visual fidelity while reducing power consumption

+ Qualcomm Spectra™ 14-bit dual image signal processors (ISPs) deliver high resolution DSLR-quality images using heterogeneous compute for advanced processing and additional power savings

+ Qualcomm® Hexagon™ 680 DSP includes Hexagon Vector eXtensions (HVX) and Sensor Core with Low Power Island for always-on sensor processing

+ Touch-To-Track: Recognize and track multiple objects on screen using advanced computer vision

FEATURING THE LATEST IN MOBILE TECHNOLOGY

Sharper, higher quality images

Qualcomm Spectra 14-bit dual image signal processors tap into the performance and feature enhancements Hexagon 680 DSP's HVX adds, with amazing features like Low Light Photo and Video, and Touch-to-Track
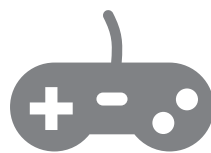
Immersive, life-like virtual reality

Experience realistic visual and audio immersion and smooth VR action enabled by Snapdragon 821's Snapdragon VR-SDK, designed for maximum performance and optimized for long battery life

Next-generation computer vision

Drive more safely with object detection and enhanced navigation. Enhance your smartphone camera capability with features that can track faces and objects for a more intelligent mobile experience.
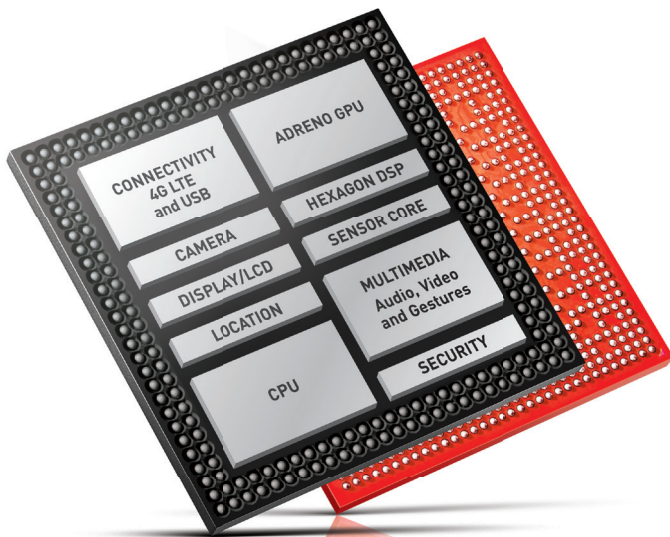
Deeply immersive 3D gaming

The combination of Snapdragon 821's Adreno 530 GPU and custom Kryo CPU creates enough compute performance to enable console quality games and exciting, next generation virtual reality applications.

All day battery life and faster charging

Snapdragon 821 lowers power consumption by an additional 5% over the previous generation plus charge a typical phone from zero to 80 percent in about 35 minutes, with Qualcomm® Quick Charge™ 3.0 technology.

To learn more visit: **snapdragon.com**

Qualcomm® snapdragon

Snapdragon 821 processors. Enabling a more connected, immersive and intelligent all day experience.

FEATURES & SPECIFICATIONS[3]

CPU

+ Custom 64-bit Kryo quad-core CPU up to 2.4GHz
+ 14nm FinFET process technology

GPU

+ Adreno 530 GPU: OpenGL ES 3.1 + AEP[1], OpenCL2.0 Full Profile[1], Vulkan[1], Renderscript, 64-bit virtual addressing DirectX 11.2, plus hardware tessellation, geometry shaders, programmable blending and decreased power consumption[2]

DSP

+ Hexagon 680 DSP with Hexagon Vector eXtensions and Qualcomm All-Ways Aware™ hub for sensor processing

Display

+ 4K60 over HDMI 2.0a & 4K Miracast 2.0
+ Qualcomm® Low-Picture Enhancement & Qualcomm® TruPalette™ camera features
+ 3:1 display interface compression w/VESA DSC 1.1

Memory

+ LPDDR4
+ UFS 2.0—Gear 3 storage
+ Universal Bandwidth Compression

Modem

+ Integrated X12 LTE modem, supporting Cat 12 download speeds up to 600 Mbps, Cat 13 upload speeds up to 150 Mbps
+ Snapdragon All Mode with support for LTE FDD and TDD, WCDMA (DB-DC-HSDPA, DC-HSUPA), TD-SCDMA, CDMA 1x/EVDO, and GSM/Edge
+ Support for 256-QAM DL, 64-QAM UL, and 4x4 MIMO
+ Support for Ultra HD Voice with the Enhanced Voice Services (EVS) codec
+ Smart Wi-Fi calling with real-time Wi-Fi quality monitoring
+ Support for Qualcomm® TruSignal™ antenna boost technology
+ LTE-U support
+ Next Gen QFE3100 Envelope Tracking

Connectivity

+ Qualcomm® VIVE™ 802.11ac 2x2 MU-MIMO
+ Tri-band Wi-Fi
+ QCA9500 802.11ad 60GHz WiFi
+ Bluetooth 4.1

Camera

+ Qualcomm Spectra dual ISPs support up to 28 megapixels
+ Dual Photodiode (2PD)
+ Hybrid Autofocus (PDAF, Laser AF, Contrast AF)

Video

+ 10-bit 4K decode
+ 1080p240 FPS decode
+ 4K HEVC video (Decode: 60 fps, 10-bit. Encode: 30 fps)
+ Simultaneous 1080p30+1080p30 inbound/outbound

Charging

+ Quick Charge 3.0

Security

+ Qualcomm® SecureMSM™ foundation
+ Qualcomm® Snapdragon™ Smart Protect
+ Qualcomm® Snapdragon Sense™ ID fingerprint technology
+ Qualcomm® Snapdragon StudioAccess™ content protection

Qualcomm® snapdragon

[1] As of Feb 16, 2016, Snapdragon 821 has been conformance certified by Khronos for OpenCL 2.0, OpenGL ES 3.1, and Vulkan.
[2] As compared to the Adreno 430 GPU in the Snapdragon 810 processor.
[3] Certain optional features available subject to Carrier and OEM selection for an additional fee.