

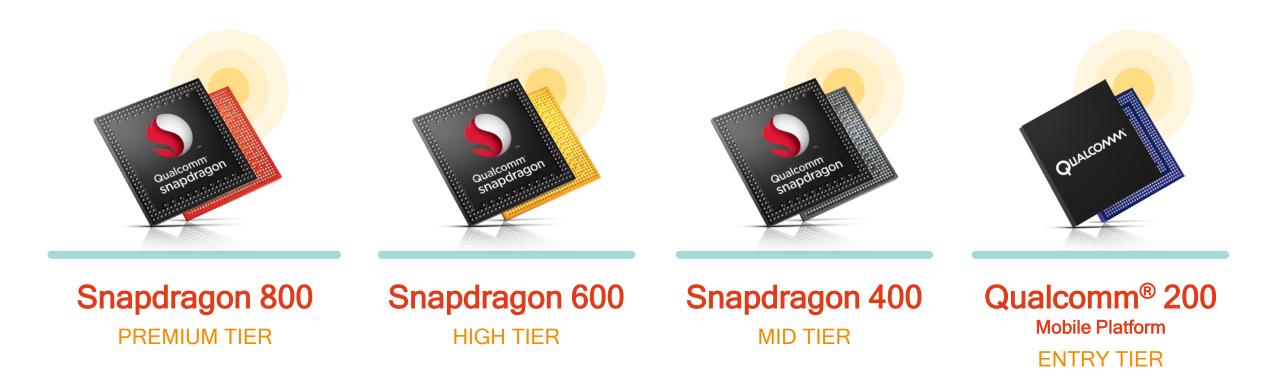
Qualcomm® Snapdragon™ 450 Mobile Platform

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Snapdragon 400 Tier @qualcomm

Qualcomm Snapdragon is a product of Qualcomm Technologies, Inc.

Mobile platform tiers



Mobile platform announcements in 2017



Snapdragon 835

Snapdragon 660 Snapdragon 630

Introducing Snapdragon 450 mobile platform

Qualcomm 205

Supporting high quality, cost-effective user experiences





Snapdragon 450 Mobile Platform

Enhancing value in the 400 tier

1 st 14nm FinFET in 400 tier

Software compatible with multiple Snapdragon mobile platforms: 425 | 427 | 430 | 435 | 625 | 626

Higher Power and Performance* for Mid-Range devices











Supports Dual Camera

and real-time Bokeh effects



Up to 25% higher performance^{*}



Qualcomm[®] Adreno[™] 506 GPU up to 25% higher performance^{*}



Snapdragon 450 Mobile Platform

Extended Features

Quick charge Power management

Audio Codec

Speaker amp

Touch Fingerprint

Snapdragon X9 LTE modem	Adreno 506 Graphics Processing Unit (GPU)		
Wi-Fi	Display Processing Unit (DPU)	Video Processing Unit (VPU)	
Qualcomm® Hexagon [™] DSP	ISP		
Qualcomm Aqstic™ Audio	CPU		
Location	Qualcomm [®] Mobile Security		

Comprehensive RF Design

Filters Power Amplifier Envelope Tracker

RF Transceiver

Antenna Switch

Antenna Tuner

Connectivity Solution 802.11ac **MU-MIMO**

Adding even more value to the 400 tier

Enhancements across technologies

Power & Performance



Camera



Multimedia



Connectivity



Designed for extended usage

E CPU	CPU	CPU	CPU
	• • • • • • • • • • • • • • • • • • •	• •	• • • • • • • • • • • • • • • • • • •
CPU	CPU	CPU	CPU

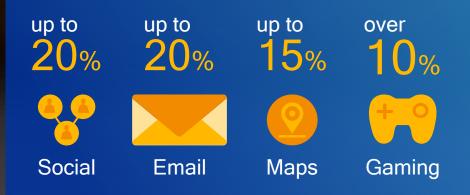
ARM Cortex A53 at 1.8GHz

Qualcomm Technologies advanced 64-bit CPU architecture, designed to tackle the toughest mobile workloads Power & Performance

up to 25% higher performance*

Improved Launch Latency

Faster app launch times^{*}





* Compared to Snapdragon 435

For superior graphics that give you an all-around 3D gaming experience

More realistic scenes and objects for graphics and mobile gaming experiences at lower power



11

Performance

up to

Faster Graphics Rendering*

30% Less Power*

up to

with Adreno 506 GPU

* Compared to Snapdragon 435

Do more throughout your day





Music playback = 8 days



Video Playback = 18 hours

4 More Hours on Snapdragon 450 at the End of the Day*



* Compared to Snapdragon 435









Zero to 85% in 35 minutes Up to 27% faster and 45% more efficient than prior generation Almost a full day charge in 30 minutes Supports USB Type-C

Less time charging, more time doing

Based on internal tests charging a 2750mAh fast charge battery (1.5C charge rate) and using the maximum power for a thermal limit of 40C for all charging implementations. Charge time based on 0% to 50% (August 2015).

Qualcomm Quick Charge is a product of Qualcomm Technologies, Inc.

Power &

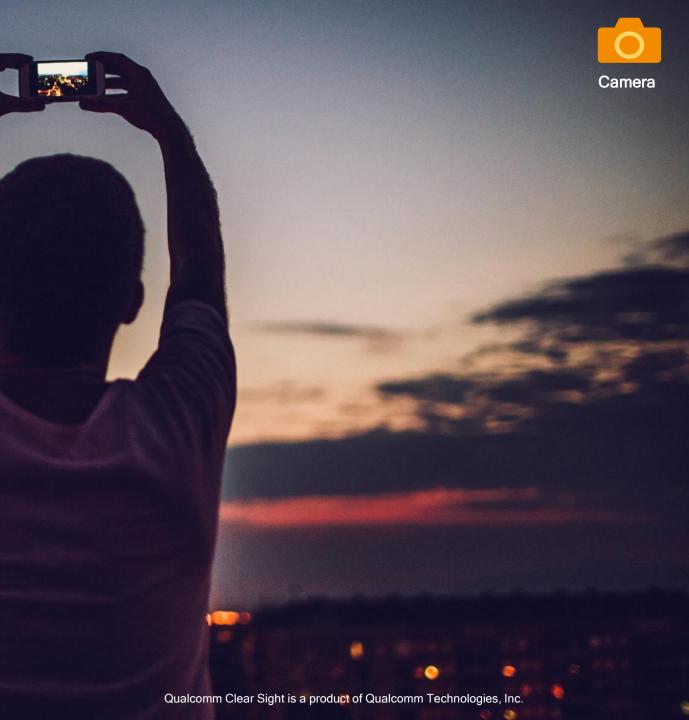
Performance

Camera

Single camera up to 21MP

Dual camera up to 13_{MP}+13_{MP}

Dual camera concurrency enables Real-time Bokeh, Qualcomm[®] Clear Sight[™] camera features, and more





Real-Time Bokeh



Real-Time Bokeh

Background blur affect during camera preview





1st time in 400 tier





Clear Sight

Uses dual cameras concurrently to capture colors the way nature intended them to be



Bayer/RGB sensor captures color information



Black & white sensor simultaneously captures contrast and light with lower noise



Improves sharpness in all lighting conditions, especially low light

Hexagon DSP

More always on, more always sensing so your device is always ready to go 5 lower power

up to

Activity Pedometer recognition

Android User motion Tilt API detector

DSP performance and power saving features in more use cases

Video

1080p @ 60 fps capture

Full HEVC encode and decode

Smoother video capture and playback





FHD+ at 60 fps (18:9 aspect ratio)

Supports high-quality display plus enhanced power savings









Camcorder Capture what you want to hear



Capture what you see with sound focus, suppress unwanted noise from outside of the field of view

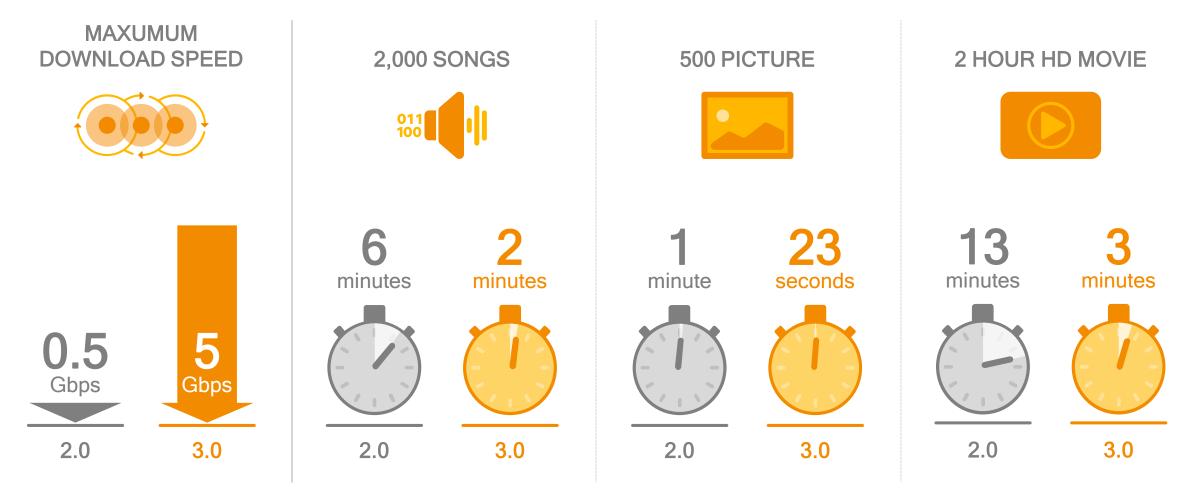
Audio zoom when the camera zooms in

Surround sound record designed to deliver the Full HD camcorder experience

High quality audio, with high dynamic range



Improved USB USB 3.0 significantly decreases download times



X9 LTE

Up to **300Mbps** downlink

2x20 carrier aggregation

802.11ac with MU-MIMO

Experience lightning-fast download speeds and superior network coverage with the Snapdragon X9 LTE modem

64

QAM

LTE CAT-6 global momentum





Location

Battery efficient, better accuracy, higher positioning availability¹



Qualcomm[®] Location

More precise pedestrian navigation in downtown environments²



GNSS Only

Up to 4X more precise location and orientation compared to traditional GNSS³

Always-On Location

with minimal impact to battery life

Stay in touch with friends, receive relevant content



Connectivity



Biometrics Eye based authentication 1st time in 400 tier

- Liveness detection
- Real-time authentication
- Cutting-edge performance
- One-stop integration





Snapdragon 450 advancements

Availability Commercial sampling : Q3 2017 In devices: Q4 2017

Gualcommon snapdragon		CPU			GPU	
Snapdragon 450	14nm	Up to 1.8 GHz	60fps	13+13 megapixels	Adreno 506	USB 3.0
Snapdragon 435	28nm	Up to 1.4 GHz	30fps	8+8 megapixels	Adreno 505	USB 2.0
Benefit	+4 hours of usage	+25%	Higher resolution	Bokeh & Clear Sight	+25%	Faster data transfer

Thank you

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