Learn about Snapdragon microprocessors on smartphones and tablets

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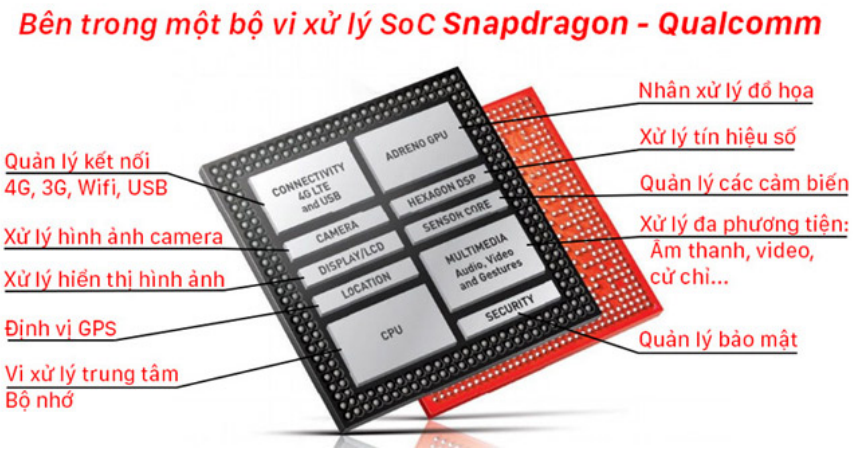
Currently, the most used microprocessors on smartphones or tablets can be mentioned by Qualcomm's Snapdragon chips. So what is Snapdragon, are there any popular Snapdragon series on the market?

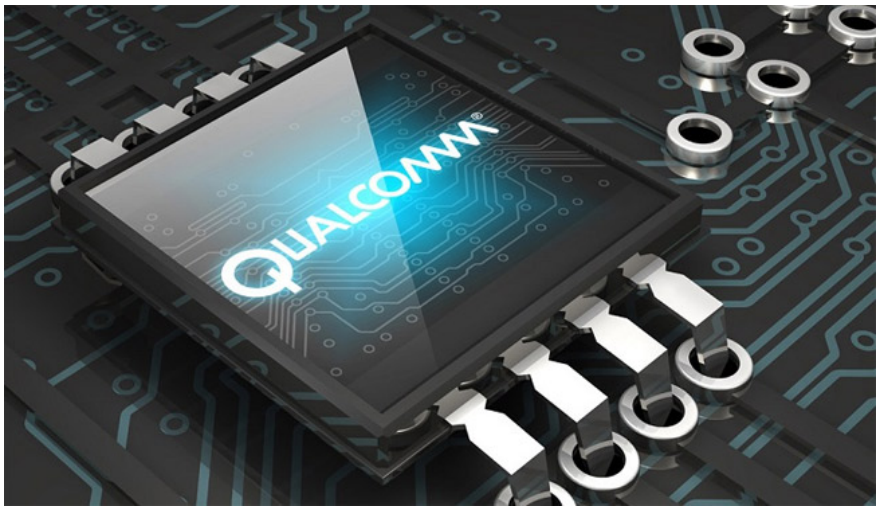
1. What is Snapdragon processor?

You can imagine the processor as the head of a machine, its task is to calculate so that the machine can work. If the computer, laptop we call the processor is a CPU - a separate part, then in the structure of the smartphone is completely different, SoC (Microchip - System On Chip) is called microprocessor This is a combination of many things like the central processor (CPU), the graphics core (GPU), the display processor, the RAM, .



Snapdragon processor uses ARM's structure, which is the most developed microprocessor structure on mobile devices thanks to its compact, energy-saving, high-performance features. Qualcomm bought the ARM core to design their Snapdragon line of chips similar to Samsung (Exynos), Mediatek, Huawei (Kirin), Apple (Apple

Ax).

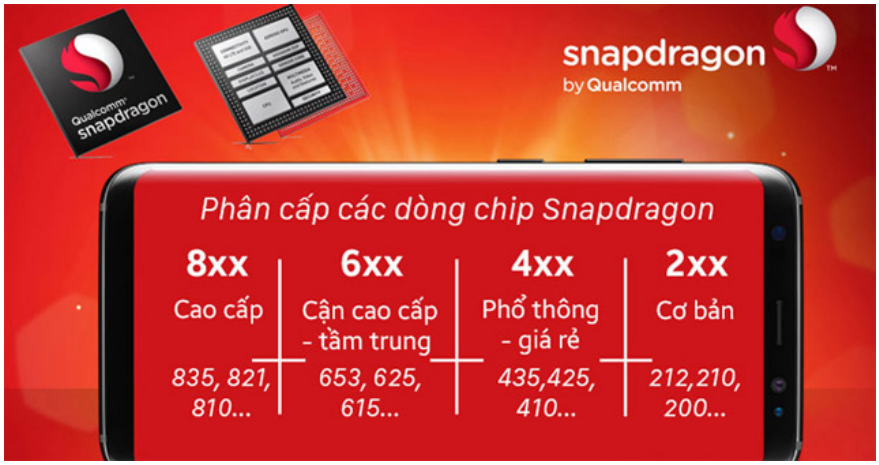


Talking about a Snapdragon processor is about factors such as how many cores the CPU has, how fast it is, which GPU to use, and whether it supports dual cameras, supports fast charging or screen resolution. How much is it? For example, when mentioning a Snapdragon processor, there are 8 cores, ie the CPU has 8 cores. However, not many multipliers are powerful processors, in fact the power of microprocessors depends on many factors such as RAM technology, speed (clock speed), type of kernel, process (14 nm, 10 nm .), .

2. The Snapdragon processor line on smartphones and tablets

Currently, Snapdragon divides into 4 processor lines for each smartphone segment prescribed by name: Snapdragon xxx, in which:

1. The first letter x represents the segment: Snapdragon 8xx is a high-end line, Snapdragon 6xx is a mid-level line, Snapdragon 4xx is a popular line and Snapdragon 2xx is a cheap line.
2. The following two x words represent the line of chips, the larger the number, the better the line will appear. Such as the new Snapdragon 845 Snapdragon 835.



Snapdragon 8xx - High-end processor line

Belonging to the top-of-the-line microprocessors equipped with the latest technologies from Qualcomm at the time of launch, Snadrgon 8xx was born for super smartphone, tablet, high-end products and some devices. High-end access from manufacturers.

Snapdrgon 800 is the first 8 series SoC, it appeared on many famous phones like Samsung S4 LTE, Samsung Note 3, Nexus 5, Xperia Z1 . using 28 nm process, has 4 32 bit cores. , providing more powerful performance, more battery saving, Adreno 330 graphics processing, smoother games. At the same time, officially support 4K movie recording, Wifi high speed WiFi connection, 4G cat 4, USB 3.0 with fast charging capability Qualcomm Quick Charge 2.0.

The Snapdragon 805 starts supporting dual cameras up to 55 MP, using a faster CPU core.

Snapdragon 808 and 810 start using 20 nm process with 64 bit core, multiplier increases to 6 or 8 more powerful cores.

Snapdragon 820 and 821 switch to Samsung's 14 nm process with 4 Kyro cores, Adreno 530 graphics, LPDDR4 RAM, fast charging Quick Charge 3.0.

Snapdragon 835 is the latest high-end chip launched in 2017 on many super products like Samsung S8, Note 8, HTC U11, Nokia 8, Sony XZ1 . using Samsung's 10 nm FinFET process with 8 64-bit cores including 4 Kyro is strong and 4 kin Kyro save battery. With Adreno 540 graphics core has 567 GFLOPS processing capacity much higher than the first 800 Snapdragon generation with only 130 GFLOPS. Supports HDR10 screen, RAM LPDDR4X and memory in high-speed UFS 2.1, 4G cat 16 network, Bluetooth 5 and fast charging Quick Charge 4.0.

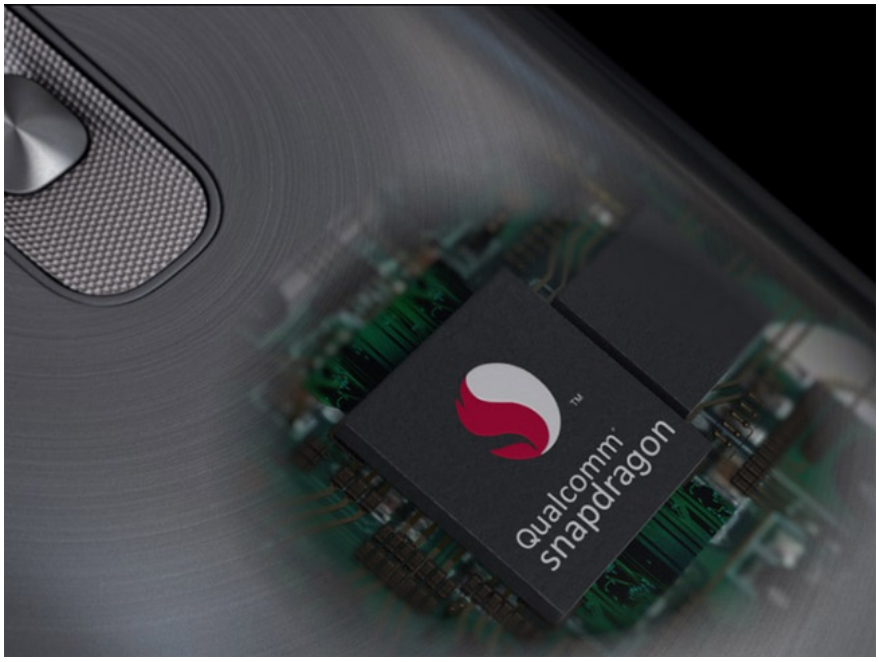
Snapdrgon 845 is expected to be a new high-end processor coming soon on smartphones from 2018.

Snapdragon 6xx - High-end near-mid range processor

Mid-range Snadrgon 6xx processors are used extensively on smartphones ranging from high-end to high-end. Objective evaluation shows that this chip has poorer performance, older or not optimal technology with Snadragon 8xx line at the same time but is stronger than 4xx line.

Snapdragon 600 (2013) is the first processor chip of this series released at the same time as the Snapdragon 800, available on HTC One, Samsung S4, OPPO N1, Nexus 7 . with 4 32 bit cores lower speed and advanced. The 28 nm process is older than Snapdrgon 800, only using Adreno 320 graphics screen with maximum screen resolution of FullHD, LPDDR3 RAM, support for standard WiFi and 4G Wi-Fi 4.

Snapdragon 610, 615, 616 and 617 (2014 - 2015) was upgraded to a 64-bit core, big.LITTLE technology means 4 high-speed cores and 4 battery-saving cores, Adreno 405 graphics, high RAM speed more and support Quick Charge 2.0.



Snapdragon 650, 652 and 653 (2016) continue to be upgraded with a high-performance 28 nm, big.LITTLE 6 or 8 core process, Adreno 510 graphics, dual-channel LPDDR3 RAM, Quick Charge 3.0 support and 4K screen. This line started using advanced Cortex-A72 cores.

Snapdragon 625 and 626 (2016) switched to the new 14 nm process with 8 64 bit cores, Adreno 506 graphics, one channel LPDDR3 RAM, Quick Charge 3.0. Snapdragon 625 appears on many machines, including Bphone 2017. This is a cheaper line than Snapdragon 65x above.

Snapdrgon 630 and 660 (2017) are the latest two processors on the Asus Zenfone 4 or OPPO R11, still using the new 14 nm process with 8 64-bit cores, dual-channel LPDDR4 RAM, Bluetooth 5.0, and Quick Charge 4.0 support. If Snapdragon 630 uses Adreno 508 graphics core, Snadragon 660 uses Adreno 512.

Snapdragon 4xx - The universal processor line

The Snapdragon 410 and 412 (2014-2015) use 64-bit cores with 4 cores, 4G cat 4, Adreno 306 graphics to support Full HD screen and 13 MP camera, LPDDR2 / 3 RAM.

Snapdragon 415, 425 and 427 (2015-2016) began to be equipped with up to 8 cores, Adreno 405 or 308 graphics, LPDDR3 higher-speed RAM, faster 4G network, Wifi supported AC standard.

Snapdragon 430 and 435 (2015-2016) use a higher graphics core than the Snapdragon 425 or 427 generation, supporting Quick Charge 3.0 fast charging and improved RAM speeds.

The Snapdragon 450 is the first low-cost chip to use the advanced 14 nm process, but still the Cortex-A53 core, but not yet upgraded the Cortex-A72, 8 64-bit cores, and Adreno 506 graphics core.

After reading this article, perhaps you also understand more about processors on smartphones and tablets. When choosing a good phone or gaming phone, you should pay much attention to SoC chip and the above information will help you a lot in choosing a satisfactory smartphone.

Maybe you are interested:

1. Why should you care about AI chips on Apple and Huawei phones?
2. Secret chips can be hidden in the device to spy on and hijack smartphones
3. Intel shook hands with AMD to release the 8th generation chip competing with Nvidia