

Apple, Huawei Both Claim First 7 nm Smartphone Chips

TSMC is the big winner, having made them both

“...the new iPhone Xs and Xs Max will contain the first smartphone processor to be made using 7 nm manufacturing technology, the most advanced process node. Huawei made the same claim, to less fanfare, late last month and it’s unclear who really deserves the accolades. If anybody does, it’s TSMC, which manufactures both chips.

“TSMC went into volume production with 7-nm tech in April, and rival Samsung is moving toward commercial 7-nm production later this year or in early 2019. GlobalFoundries recently abandoned its attempts to develop a 7 nm process, reasoning that the multibillion-dollar investment would never pay for itself. And Intel announced delays in its move to its next manufacturing technology, which it calls a 10-nm node but which may be equivalent to others’ 7-nm technology.

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“Apple’s new A12...is made up of six CPU cores, four GPU cores, and an 8-core ‘neural engine’ to handle machine learning tasks. According to Apple, the neural engine can perform 5 trillion operations per second—an eight-fold boost—and consumes one-tenth the energy of its previous [version]. Of the CPU cores, two are designed for performance and are 15 percent faster than their predecessors. The other four are built for efficiency, with a 50 percent improvement on that metric.

“Huawei’s chip, the Kirin 980, was unveiled...31 August. It packs 6.9 billion transistors onto a one-square-centimeter chip. ... It has 8 cores, two big, high-performance ones ..., two middle-performance ones ..., and four smaller, high-efficiency cores.”