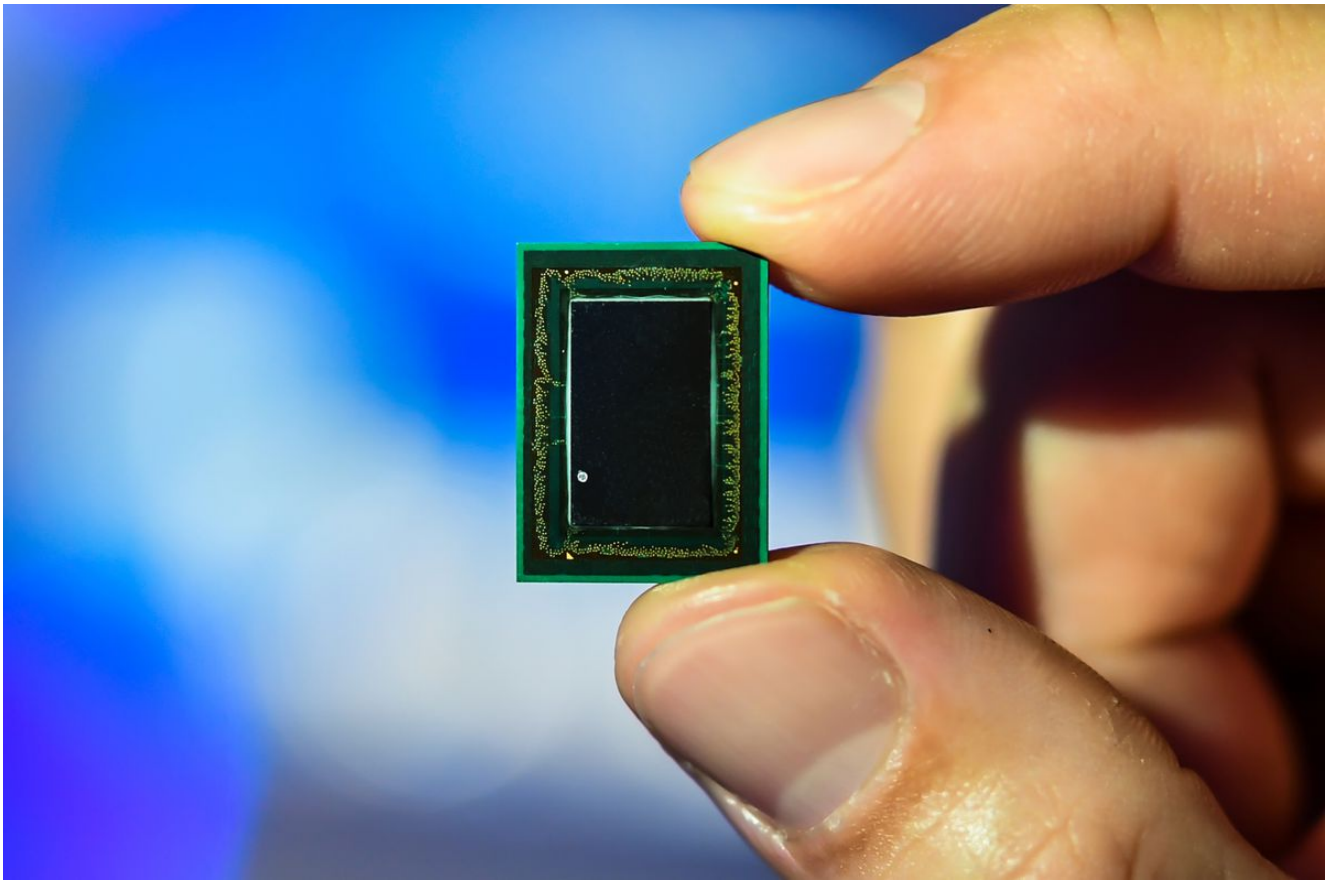
Qualcomm’s new Snapdragon 8c and 7c processors will power cheaper ARM laptops

Qualcomm has had big ambitions for ARM-powered Windows laptops for years. At its annual Snapdragon Tech Summit, the chipmaker revealed its biggest play yet: the Snapdragon 8c and the Snapdragon 7c, two new processors that are designed to create a new lineup of ARM chips for Windows laptops.

The 8c is positioned as a replacement for the Snapdragon 850 processor, Qualcomm’s second-generation Windows ARM chip. The 7c is an entirely new entry-level product that’s meant to compete with budget Windows laptops on the low end of the hardware spectrum. Last year’s 8cx isn’t going anywhere; it’ll remain a top-of-the-line flagship option for those who want the absolute best performance.

On the spec side, Qualcomm says that the 8c will offer up to 30 percent improved performance compared to the Snapdragon 850. It’ll feature a Kryo 490 CPU, Adreno 675 GPU, and an integrated X24 LTE modem for connectivity. Manufacturers will also be able to pair it with an X55 5G modem.



The 7c is a step down from that, with an octa-core Kryo 468 CPU, Adreno 618 GPU, and X15 LTE modem. (There's no 5G option available here.) The advantage, however, is that Qualcomm says the 7c will offer a 25 percent increase in system performance and up to twice the battery life compared to "competing platforms" (e.g., traditional entry-level Windows PCs).

Taken together, the new lineup gives Qualcomm a much wider range of ARM processor solutions for PC manufacturers at a much wider range of prices and performance levels. But there are some big questions about the announcement that have yet to be answered.

Chief among those is the fact that over a year after it announced the 8cx processor, no company has actually shipped a device that's powered by it. The closest we've gotten is the Surface Pro X, which has a custom variant of the 8cx (the Microsoft SQ1). There's also the announced-but-delayed Galaxy Book S, which was supposed to be out in September but never actually shipped. (Samsung has yet to announce a new release date.)

While we’ll likely see more 8cx-powered (and 8c- and 7c-powered) laptops out in 2020, the adoption of ARM on the PC side of things has been slow, to say the least. It’s great that Qualcomm is giving hardware manufacturers more options, but it’s still on laptop makers to actually start selling ARM devices.

The other question is performance and software. While it’s still difficult to gauge exactly how good Qualcomm’s stock 8cx is (again, nothing has shipped yet), the Surface Pro X’s SQ1 offered lackluster performance and problems with app compatibility. Given that Qualcomm’s new chips offer lower performance than the 8cx (and, presumably, the SQ1), it’ll be interesting to see if these issues will persist on the new processors — whenever they do.

https://www.theverge.com/circuitbreaker/2019/12/5/20997402/qualcomm-arm-midrange-windows-laptop-processors-8c-7c-8cx-snapdragon