

Qualcomm aims to spark virtual reality market with its first standalone AR/VR chip

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Qualcomm is rolling out a dedicated chip targeting virtual reality/augmented reality headsets in hopes of driving the nascent market into the mainstream.

The new [chip](#) from Qualcomm, which primarily makes smartphone semiconductors today, targets [virtual reality](#)/augmented reality gear at affordable prices—in the \$200 range.

That is similar to the \$199 pricetag for Facebook's new Oculus Go virtual reality headset, which went on sale earlier this month.

Oculus Go, a standalone VR headset that doesn't require tethering to a smartphone or computer, is powered by Qualcomm's Snapdragon 821 smartphone processor.

By having a dedicated virtual/augmented reality chip, Qualcomm hopes to be able to drive a better experience for untethered AR/VR devices—with longer battery life, lower temperatures and better video/audio.

Qualcomm is the first major chip designer to produce a system-on-a-chip specifically for virtual reality/augmented reality. In the past, it has supplied smartphone processors that were sometimes tweaked for VR/AR customers.

But other chip makers could follow suit. Both Intel and Nvidia have

virtual reality programs that supply headset makers with computer processors and graphics chips.

Qualcomm is calling its AR/VR chip platform the Snapdragon XR1, and it was unveiled Tuesday at the Augmented World Expo in the Bay Area. The chip is tailored for high-definition video, audio, graphics, head tracking, speech recognition, jitter reduction, low latency and controller support, among other features key to virtual reality.

"We strongly believe that XR is the next mobile computing platform," said Hiren Bhinde, director of XR product management at Qualcomm. "This is going to disrupt all these different verticals, including health care, education, military, retail, marketing and advertising."

Many virtual reality headsets, such as the Samsung Galaxy Gear VR and Google Daydream, are essentially accessories to smartphones. Users fit their smartphones into a virtual reality headset to get the VR experience.

In addition, there are powerful gaming [virtual reality headsets](#) such as Oculus Rift, HTC Vive and Sony PlayStation VR. They are typically linked via cables to souped-up gaming computers or consoles and cost \$400 or more.

But standalone VR devices—untethered from computers or smartphones—have been gaining traction this year, said George Jijiashvili, senior analyst with CCS Insights. Oculus Go, Lenovo Mirage Solo and the HTC Vive Focus are among the new untethered devices.

"In the standalone VR headset category, pricing will be a crucial determining factor of success," said Jijiashvili. "Given the Oculus Go's price tag of \$199, I'm optimistic about its chances of sparking a new wave of growth that can help broaden the appeal of VR, particularly among businesses and in education as well."

Qualcomm will still supply more expensive, \$400-plus premium gaming headsets with chips based on its latest Snapdragon 845 top tier smartphone processor. It can power eye tracking and sophisticated controller functions so gamers swinging a sword feel like their hands are part of the game, said Hugo Swart, senior director at Qualcomm and head of XR business management.

The dedicated Snapdragon XR1 platform doesn't support the same level of controller immersion. But it still aims to create a good experience for the price.

"What we see is a demand from (device makers) and consumers for a product that is good, but maybe doesn't have all the features of premium quality," said Swart. "You still feel immersed in the experience. You still have the very low latency that is required for a good experience, but it is more affordable than the premium quality tier."

According to CCS Insight's latest market forecast, 2 million standalone VR headsets will be shipped globally in 2019, rising to 10 million in 2022.

CCS Insight forecasts 22 million virtual reality and augmented reality headsets and glasses of all types will be sold in 2018—with fivefold growth to 121 million devices by 2022.

Smartphone-connected virtual reality will account for the bulk of the sales this year, but standalone devices are expected to grow quickly and account for 63 percent of the total market value of \$9.9 billion by 2022, according to CCS.

"We were encouraged to see in our latest consumer survey that virtual tourism, remote participation in events such as music concerts and virtual social interactions are all emerging as further uses for virtual

reality," said Jijiashvili. "Watching video is also proving popular, particularly on smartphone-based headsets."

Qualcomm's Snapdragon XR1 chips are being tested by VR/AR device makers now. They are expected to be used in headsets available to consumers starting next year.

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