Qualcomm introduces third-generation 5G chips to boost speeds and performance of mobile devices

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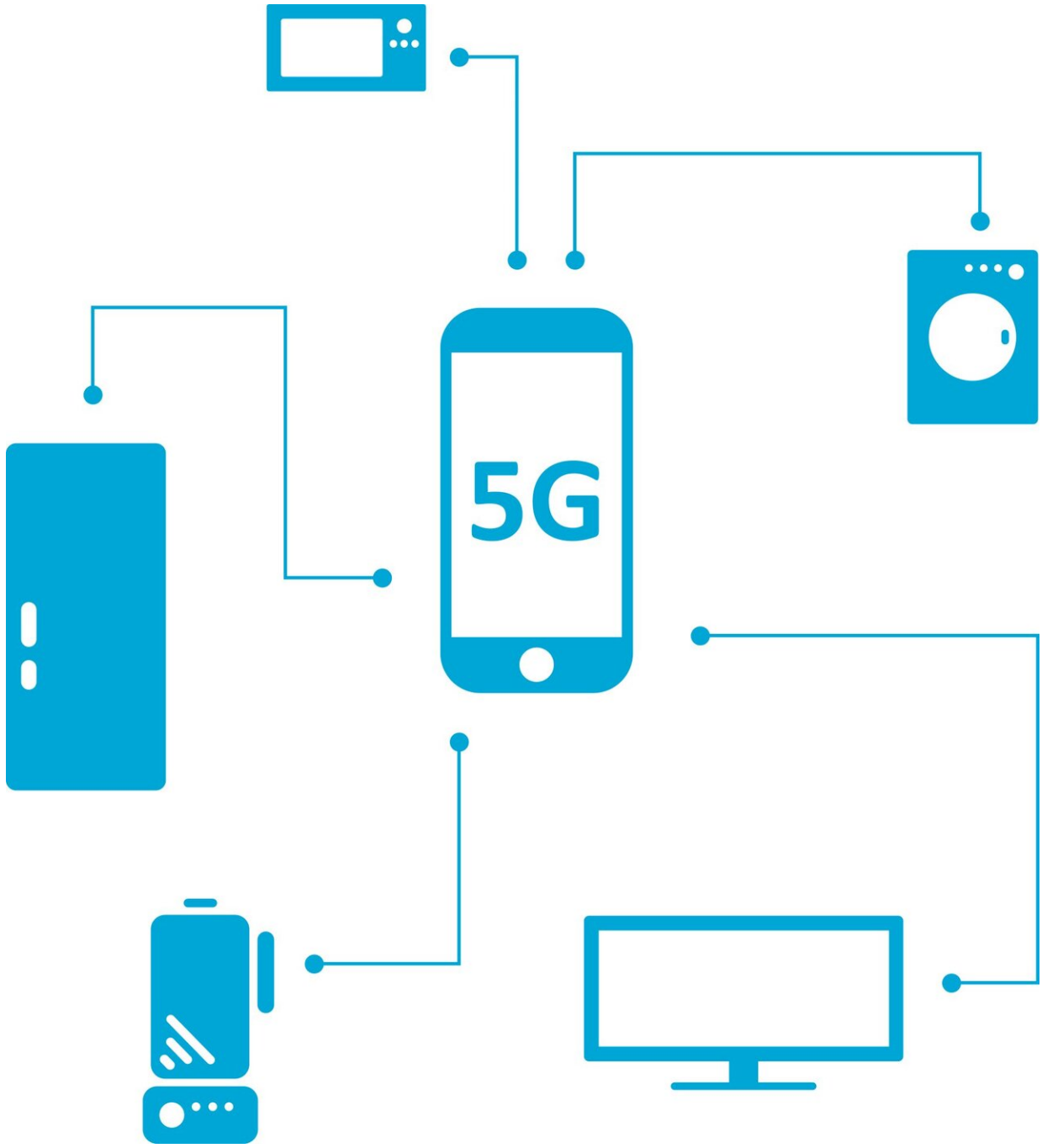

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Continuing its efforts to drive 5G technology, Qualcomm on Tuesday

introduced its third generation 5G mobile chip aimed at improving performance for smartphones and other gadgets.

The San Diego company's new processor and radio frequency antenna platform give mobile operators the ability to combine fragmented airwave spectrum to expand coverage, boost capacity and deliver faster speeds.

The technique is called carrier aggregation. The Snapdragon X60 5G modem and antenna work across a wide range of airwave frequencies earmarked for 5G.

They include high-frequency millimeter-wave bands, mid-frequency sub-6 gigahertz spectrum and low-band airwaves, which are used by T-Mobile to power 5G today in the U.S.

"Qualcomm's third-generation X60 5G modem-RF system is a big step forward for 5G," said Geoff Blader, an analyst with technology research firm CCS Insights. "Spectrum aggregation across all millimeter wave and sub-6 gigahertz bands will deliver a big performance gain. This took years to get to in LTE."

Qualcomm expects to ship samples of the chip platform to customers this spring, with the first commercial smartphones powered by the X60 modem-RF system forecast in early 2021.

5G, or fifth-generation wireless technology, ultimately wants to provide fiber-optic like download speeds with very low transmission lag times to mobile devices. Qualcomm's latest chip supports peak download speeds of 7.5 gigabits per second.

In addition, these new networks have been designed to connect a lot more than smartphones. Cars, smart cities infrastructure, automated

factories and myriad Internet of Things devices are also are expected to get wireless Internet connectivity via 5G.

More than 45 wireless operators globally, including all four U.S. carriers, have launched 5G networks. Coverage remains spotty in many cases for now, however.

Qualcomm says 175 million to 225 million 5G smartphones will be shipped this year, with more than 450 million 5G devices sold in 2021.

"As 5G standalone networks are introduced in 2020, our third-generation 5G modem-RF platform brings extensive spectrum aggregation capabilities and options to fuel the rapid expansion of 5G rollouts," said Qualcomm President Cristiano Amon, "while enhancing coverage, power efficiency and performance for mobile devices."

"Standalone" means the network operates solely using 5G technology and no longer relies on a parallel 4G network to deliver some functions, such as voice calls.

There are different flavors of 5G. High-frequency millimeter wave, which Verizon is betting on, is capable of very fast speeds. But millimeter-wave signals don't travel very far and can't penetrate buildings. They require the installation of additional small cell antennas. So millimeter wave is mostly targeted toward downtowns and other dense urban neighborhoods.

Mid-band frequencies aren't as fast. But these airwaves do travel farther and can penetrate buildings. They are expected to serve suburban areas. By supporting spectrum band aggregation, Qualcomm says its new chip-RF antenna system will allow mobile operators to double peak speeds on mid-band frequencies.

Low-frequency bands, such as T-Mobile's 5G, are slower still. But they do travel greater distances. They can extend 5G coverage beyond dense cities and suburbs.

Qualcomm is among the global leaders in 5G technologies. The company is counting on 5G to jump-start smartphone sales, which have been stagnant for at least two years as performance and features plateaued, hurting the company's revenue.

Qualcomm's shares ended trading Tuesday down 1.75% at $88.03 on the Nasdaq exchange.