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# Qualcomm Extends Connectivity Leadership with Second Generation Gigabit LTE Modem

## -- Snapdragon X20 LTE Modem is World's First Chipset to Support LTE Category 18 with Download Speeds up to 1.2Gbps, Paving the Way for 5G --

SAN DIEGO, Feb. 21, 2017 /PRNewswire/ -- Qualcomm Incorporated (NASDAQ: QCOM) today announced that its subsidiary, Qualcomm Technologies, Inc., has started sampling Qualcomm® Snapdragon™ X20 LTE chipset, its seventh-generation LTE multimode modem and second generation Gigabit LTE solution, which is built on a leading-edge 10nm FinFET process. The modem and its new Snapdragon X20 LTE transceiver provide a number of industry firsts. It is the first commercially announced Gigabit LTE chipset designed to deliver fiber-like LTE Category 18 download speeds of up to 1.2 Gbps, a 20 percent improvement in download speeds over the previous generation. Additionally, it allows support for up to 5x20 MHz downlink Carrier Aggregation (CA) across licensed and unlicensed FDD and TDD radio frequencies, as well as 4x4 MIMO on up to three aggregated LTE carriers. Lastly, it supports integrated Dual SIM Dual VoLTE (DSDV) capability, a first for Snapdragon LTE modems. These leading-edge features of the Snapdragon X20 LTE modem are supported by the first commercially announced single-chip RF transceiver capable of simultaneously receiving up to 12 spatial streams of LTE data. As several leading OEMs and operators launch Gigabit LTE devices and networks around the globe, the arrival of the Snapdragon X20 LTE modem will drive new connectivity experiences across the mobile ecosystem.

The Snapdragon X20 LTE modem peak speeds extend beyond Gigabit LTE by using Carrier Aggregation and 4x4 MIMO. With these capabilities, the Snapdragon X20 LTE modem can simultaneously receive 12 unique streams of data on as few as three 20 MHz carriers. On each downlink stream, the Snapdragon X20 LTE modem's support for 256-QAM boosts the peak throughput to ~100Mbps. On the uplink, 2x20MHz carrier aggregation plus 64-QAM allows for speeds up to 150Mbps.

The Snapdragon X20 LTE modem also features more advanced dual SIM functionality and, as the first Snapdragon LTE modem to support DSDV, it provides users with the benefits of Ultra HD Voice and other IMS-based services on both SIMs inserted into the device. In addition to the aforementioned advanced connectivity feature sets, the Snapdragon X20 LTE modem supports Snapdragon All Mode, including all major cellular technologies (LTE FDD, LTE TDD, WCDMA, TD-SCDMA, EV-DO, CDMA 1x, and GSM/EDGE), over 40 cellular frequency bands (including U.S. public safety Band 14 and 600 MHz band support), over 1000 carrier aggregation band combinations, LTE Broadcast, Voice over LTE (VoLTE) with support for Ultra HD Voice quality with the EVS codec, and single radio voice call continuity to 3G and 2G.

Of note, the Snapdragon X20 LTE modem is an LTE Advanced Pro modem that supports Licensed Assisted Access (LAA), the global standard for LTE in unlicensed spectrum. Support for both 5xCA and LAA is significant because it allows operators to launch Gigabit LTE service with as little as 10 MHz of licensed spectrum, which vastly expands the number of operators who can offer Gigabit LTE service around the globe. Additionally, the Snapdragon X20 LTE modem supports the 3.5GHz shared spectrum in the U.S. called Citizens Broadband Radio Service (CBRS), which can be used to provide new services, such as private LTE-based networks. It can also be used by existing mobile operators to offer Gigabit LTE in more places by making more spectrum available. Gigabit LTE marks the next phase of 4G evolution as it drives richer content, new connected experiences, apps and usage models, while also serving as an essential pillar for the 5G mobile experience. When supported in 5G multimode devices, the technology can provide a wide, ultra high-speed coverage layer for nascent 5G networks. With this, application developers can expect a wide coverage of seamless Gigabit connectivity to mobile devices, enabling them to create new generations of applications, services and user experiences.

By supporting fiber-like Internet speeds wirelessly over LTE, the Snapdragon X20 LTE modem will allow original equipment manufacturers (OEM) to offer the latest generation of connectivity experiences, such as immersive 360-degree video and virtual reality, connected cloud computing, rich entertainment, and instant apps, directly to consumers. With mass scale adoption of Gigabit LTE in devices and networks, both OEMs and operators will benefit from enhanced network capacity and spectral efficiency, while also ensuring users have a superior connectivity experience.

"The Snapdragon X20 LTE modem is the latest example of Qualcomm extending our connectivity leadership and puts us at the forefront in driving global deployment of Gigabit LTE worldwide, laying an essential foundation for the successful launch of 5G mobile services worldwide," said Serge Willenegger, senior vice president, product management, Qualcomm

Technologies Inc. "We anticipate that the Snapdragon X20 LTE modem will help accelerate the worldwide adoption of Gigabit LTE, allowing users to enjoy even faster data speeds, further improving consumers' always on mobile lifestyle."

The Qualcomm Snapdragon X20 LTE modem has started sampling to customers with first commercial devices expected in the first half of 2018.

### **About Qualcomm**

Qualcomm's technologies powered the smartphone revolution and connected billions of people. We pioneered 3G and 4G – and now we are leading the way to 5G and a new era of intelligent, connected devices. Our products are revolutionizing industries, including automotive, computing, IoT, healthcare and data center, and are allowing millions of devices to connect with each other in ways never before imagined. Qualcomm Incorporated includes our licensing business, QTL, and the vast majority of our patent portfolio. Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, all of our engineering, research and development functions, and all of our products and services businesses, including, our QCT semiconductor business. For more information, visit Qualcomm's [website](#), [OnQ blog](#), [Twitter](#) and [Facebook](#) pages.

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