February 11, 2016

Qualcomm Announces Mobile Industry's First Gigabit Class LTE Modem

- Qualcomm Technologies' sixth generation LTE modem chipset supports download speeds up to 1 Gbps, and is the mobile industry's first announced LTE Advanced Pro modem with support for Licensed Assisted Access -

SAN DIEGO, Feb. 11, 2016 /PRNewswire/ -- Qualcomm Incorporated (NASDAQ: QCOM) today announced that its subsidiary, Qualcomm Technologies, Inc., has introduced its sixth-generation discrete LTE multimode chipset -- the Qualcomm® Snapdragon™ X16 LTE modem, which is built on a leading-edge 14nm FinFET process -- and the Qualcomm RF Transceiver, WTR5975. The Snapdragon X16 LTE modem is the first commercially announced Gigabit Class LTE chipset designed to deliver fiber-like LTE Category 16 download speeds of up to 1 Gbps, supporting up to 4x20 MHz downlink Carrier Aggregation (CA) across FDD and TDD spectrum with 256-QAM, and 2x20 MHz uplink carrier aggregation plus 64-QAM for uplink speeds up to 150 Mbps.

Experience the interactive Multimedia News Release here: http://www.multivu.com/players/English/7757151-qualcomm-snapdragon-x16-lte-modem/

The Snapdragon X16 LTE modem is the first instantiation of Qualcomm Technologies' new, advanced modem architecture. This highly scalable architecture, with modular components and common software, will allow Qualcomm Technologies to rapidly evolve its modem product line to address a wide range of connected applications, ranging from ultra-fast mobile broadband to power-efficient connectivity for Internet of Things (IoT) devices.

The Snapdragon X16 LTE modem also supports Licensed Assisted Access (LAA), the global standard for LTE in unlicensed spectrum, becoming the mobile industry's first commercially announced LTE Advanced Pro modem. LTE Advanced Pro, beginning with 3GPP Release 13, marks an important next phase for 4G that will expand the technology into new applications and usage models, establishing the foundation for unified and more capable connectivity platforms into the next decade.

The Snapdragon X16 LTE modem is designed to reach Gigabit Class LTE speeds using the same amount of spectrum as Category 9 LTE devices. By using carrier aggregation and 4x4 MIMO, the Snapdragon X16 LTE modem can receive 10 unique streams of data using only three 20 MHz carriers. Its support for 256-QAM boosts the peak throughput of each stream from ~75 Mbps to ~100 Mbps, with additional gains possible with modem data compression. Additionally, with

support for LAA as well as LTE-U, this combination reduces the amount of licensed spectrum required – to 40 MHz or less – to vastly expand the number of operators that can deploy Gigabit Class LTE speeds around the globe.

In addition to the advanced connectivity feature sets, the new modem and transceiver support Snapdragon All Mode, including all major cellular technologies (LTE FDD, LTE TDD, WCDMA, TD-SCDMA, EV-DO, CDMA 1x, and GSM/EDGE), frequency bands, Carrier Aggregation band combinations, LTE dual SIM, LTE Broadcast, HD and Ultra HD Voice over LTE (VoLTE) with single radio voice call continuity to 3G and 2G.

"In addition to serving as a significant milestone for the mobile industry, the Snapdragon X16 LTE modem is a powerful testament to Qualcomm Technologies' continued technology leadership in all things wireless," said Cristiano Amon, executive vice president, Qualcomm Technologies, Inc., and president, QCT. "Not only does the Snapdragon X16 blur the lines between wired and wireless broadband, but marks an important step toward 5G as we enable deeper unlicensed spectrum integration with LTE and more advanced MIMO techniques to support growing data consumption and deliver an even faster and smoother user experience."

The Snapdragon X16 LTE modem pairs with the new WTR5975 RF transceiver, the world's first single-chip RF IC supporting Gigabit Class LTE, LTE-U and LAA with 5 GHz unlicensed band support. The highly integrated WTR5975 supports up to 4x downlink CA, 2x uplink CA, all 3GPP-approved bands, including 3.5GHz bands 42 and 43, and 4x4 MIMO in a single transceiver chip, dramatically reducing the footprint required to support advanced CA and MIMO configurations. The WTR5975 also features a new digital interconnect interface designed to facilitate PCB layout in advanced LTE devices by simplifying routing between the modem and transceiver. The Snapdragon X16 LTE modem pairs with Qualcomm Technologies' Qualcomm® RF360™ QET4100 Envelope Tracker to provide a major advancement in LTE power efficiency with the world's first announced 40MHz envelope tracking solution for LTE FDD and LTE TDD.

The Snapdragon X16 LTE modem, WTR5975 and QET4100 are designed and optimized together as a system to support fast downloads, swift application performance, as well as provide enhanced thermal efficiency and optimized power consumption. The new chipset is designed to enable a broad range of connected platforms from smartphones, tablets, and mobile computing devices to cars, drones and virtual reality headsets. With Gigabit Class LTE speeds, users will be able to take advantage of breakthrough features, such as live streaming of 360 degree virtual reality content and faster, more seamless access to cloud-based applications and services.

Snapdragon X16 LTE modem, WTR5975 and QET4100 samples are available now, with first commercial products expected in second half of 2016.

About Qualcomm Incorporated
Qualcomm Incorporated (NASDAQ: QCOM) is a world leader in 3G, 4G and next-generation wireless technologies. Qualcomm Incorporated includes Qualcomm's licensing business, QTL, and the vast majority of its patent portfolio. Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, substantially all of Qualcomm's engineering, research and development functions, and substantially all of its products and services businesses, including its semiconductor business, QCT. For more than 30 years, Qualcomm ideas and inventions have driven the evolution of digital communications, linking people everywhere more closely to information, entertainment and each other. For more information, visit Qualcomm's website, OnQ blog, Twitter and Facebook pages.

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The first commercially announced cellular modem designed to support

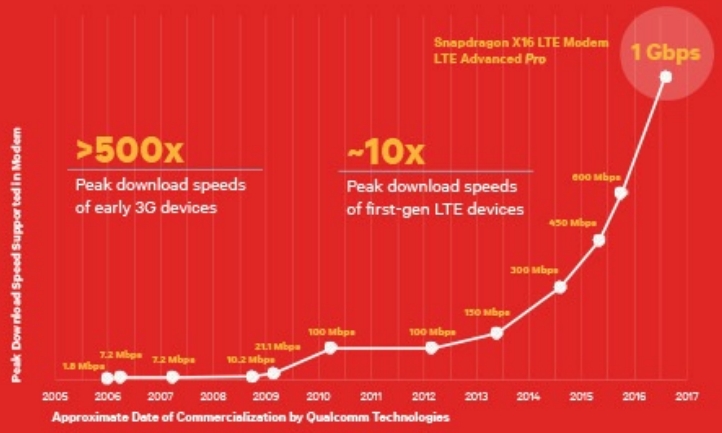
Gigabit Class LTE

Mind-blowing speeds of up to **1 gigabit per second**

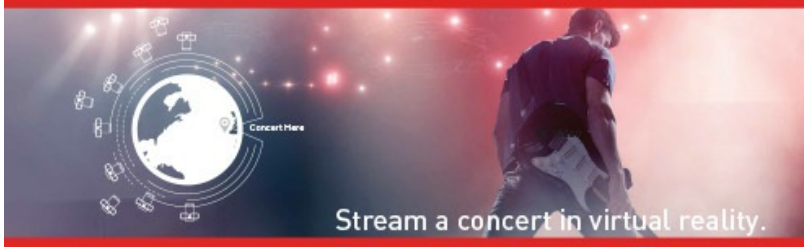
That's ridiculously fast. Fiber optic cable fast.

But "cable" isn't part of Snapdragon's vocabulary. So we designed the Snapdragon X16 LTE modem to give you those speeds wirelessly. Nice.

And it's more than just fast. It marks a big milestone for the whole mobile industry. Look how far (and how fast) we've come.



What will you do with Gigabit Class LTE speeds?

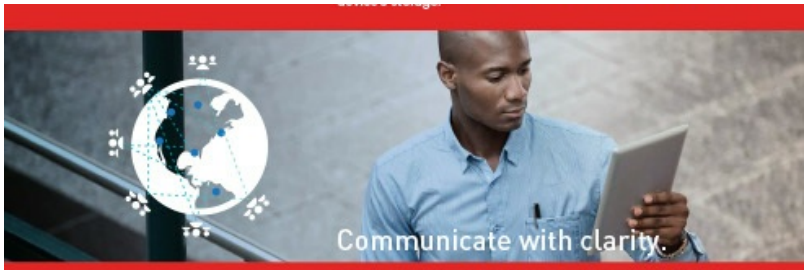


Stream a concert in virtual reality.

Feel like you're really there. With Gigabit Class LTE, you can stream the event right to your device, all in live 360º video.

"Infinite extension" to your storage.

With speeds that rival the read speeds of local flash memory, Gigabit Class LTE lets you to use the cloud as an "infinite extension" to your device's storage.



Forget choppy video. With Gigabit Class LTE speeds, you can enjoy fluid 60fps HD video chat and screen sharing with several people at once.

Got a long flight? With Gigabit Class LTE speeds, you can load up on your favorite flicks in glorious HD... before it's time to put your device in airplane mode.

Arthur C. Clarke wrote,

"Any sufficiently advanced technology is indistinguishable from magic."

And looking at how the Snapdragon X16 LTE modem achieves Gigabit Class LTE speeds, we couldn't agree more.

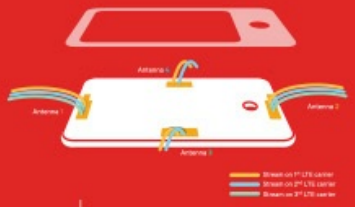
MORE

- LTE Connections
- Antennas
- Advanced Signal Processing

Up to four LTE connections

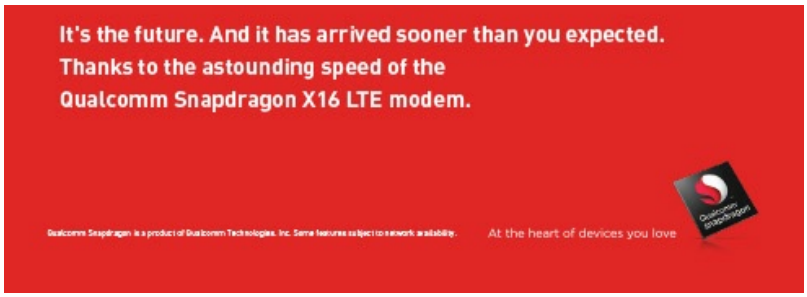
The Snapdragon X16 LTE modem can bond together up to four LTE connections using carrier aggregation, to create a wider, faster connection. And because it's an LTE Advanced Pro modem with support for Licensed Assisted Access (LAA), it allows operators around the world to use unlicensed spectrum for some of those connections — opening up the possibility for more operators to offer Gigabit Class LTE.

The Snapdragon X16 LTE modem uses 4x4 MIMO (multiple input, multiple output) technology to receive data on up to four antennas simultaneously. That's twice the number of antennas found in traditional LTE devices, allowing your device to receive 10 unique streams of LTE data simultaneously, each contributing ~100 Mbps of peak throughput.



The Snapdragon X16 LTE modem supports 256-QAM (quadrature amplitude modulation) in the downlink. That means it uses advanced signal processing to discern more 1s and 0s of data from each LTE transmission. The result is 33% faster throughput versus traditional LTE devices.

Is this 4G or 5G?



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