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## **Samsung and Qualcomm to Deliver Industry-Leading Small Cells supporting LTE in Unlicensed Spectrum**

*Samsung LTE-U eFemto cells powered by Qualcomm® FSM™ chipsets will help enhance speed and capacity in mobile networks*

**SEOUL, KOREA and SAN DIEGO, CA** – February 17, 2016 - Samsung Electronics Co., Ltd. and Qualcomm Technologies, Inc., a wholly-owned subsidiary of Qualcomm Incorporated (NASDAQ: QCOM), today announced their collaboration on small cell technologies and products supporting LTE in Unlicensed spectrum designed to enhance the speed and capacity of mobile networks – helping operators provide richer and superior user experiences for their subscribers.

As the amount of data services and smartphone devices dramatically increases, more spectrum is required to accommodate fast growing data traffic and help ensure a great user experience. LTE in Unlicensed spectrum includes a key family of technologies that allows aggregation of licensed and unlicensed spectrum bands, such as 5 GHz, to efficiently and timely increase network capacity and speed.

The Samsung LTE-U eFemto cell incorporates a Qualcomm FSM9955 chipset from Qualcomm Technologies. Through aggregation of licensed and unlicensed spectrum, Samsung's LTE-U eFemto cells can help mobile operators cope with the skyrocketing demand for mobile data by improving network performance in hotspots, venues and enterprise environments including offices, malls, hospitals and other public spaces and facilities.

The Qualcomm FSM9955 chipset incorporates sophisticated enhanced Carrier Sensing Adaptive Transmission (eCSAT) features for coexistence with Wi-Fi per the latest LTE-U Forum specifications released last October, designed to enable fair sharing of unlicensed spectrum in both below and above Wi-Fi's Energy-Detect (ED) threshold scenarios.

Using the Qualcomm FSM9955 chipset, the Samsung LTE-U eFemto cell can also support LTE Licensed-Assisted Access (LAA) by simple software upgrade. LAA incorporates "Listen-Before-Talk" features required in certain regions for fair co-existence with Wi-Fi, making it a global solution for bringing LTE into unlicensed spectrum. LAA is part of the 3GPP LTE Advanced Pro Release 13 standard to be finalized in early 2016 and then expected to be rapidly adopted by operators around the world.

"We are pleased to collaborate with industry leader Samsung in accelerating small cell innovations and extending the benefits of LTE to unlicensed spectrum," said Neville Meijers, Vice President of Small Cells, Qualcomm Technologies, Inc. "Making adequate use of both licensed and unlicensed spectrum bands is essential to meet data demand and provide end users with the best possible mobile experience."

"We are proud to bring this innovative LTE-U technology into our small cell portfolio. Operators and enterprises need a combination of cutting-edge technology and affordability to meet the explosive demand for data, both today with 4G and beyond." said Kiho Cho, Vice President of Network System Design Lab, Network Business at Samsung Electronics. "Samsung LTE-U eFemto cells will benefit end users by enabling faster data communications, with seamless mobility and reliable performance, while minimizing interference with Wi-Fi."

The Samsung LTE-U eFemto cell is designed to enable plug-and-play deployments with easier installation and a high capacity for both enterprises and operators. A single small cell unit can support three carriers of 20 MHz each, across both licensed and unlicensed spectrum, offering a peak download throughput up to 450Mbps.

The Samsung LTE-U eFemto cell with Qualcomm FSM9955 chipset will be exhibited at the Qualcomm booth (Exhibit Hall 3 #3E10) and the Samsung booth (Exhibit Hall 2 Stand 2M10) during Mobile World Congress 2016, February 22-25 in Barcelona, Spain.

For more information on this press release including videos, photos and related Samsung Newsroom articles, please visit <https://news.samsung.com/global/samsung-and-qualcomm-to-deliver-industry-leading-small-cells-supporting-lte-in-unlicensed-spectrum>

#### **About Samsung Electronics Co., Ltd**

Samsung Electronics Co., Ltd. inspires the world and shapes the future with transformative ideas and technologies that redefine the worlds of TVs, smartphones, wearable devices, tablets, cameras, digital appliances, printers, medical equipment, network systems, and semiconductor and LED solutions. We are also leading in the Internet of Things space with the open platform SmartThings, our broad range of smart devices, and through proactive cross-industry collaboration. We employ 319,000 people across 84 countries with annual sales of US \$196 billion. To discover more, and for the latest news, feature articles and press material, please visit the Samsung Newsroom at [news.samsung.com](http://news.samsung.com).

#### **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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