Extending LTE to unlicensed spectrum

As part of Qualcomm Technologies' efforts to support operators in addressing the ongoing surge in data demand (aka 1000x challenge), we are extending LTE to 5GHz unlicensed spectrum (LTE-U) by integrating it into our small cell solutions and mobile device platforms. LTE-U is designed to offer better performance and enhanced user experience through a unified network while fairly coexisting with Wi-Fi.

Qualcomm Technologies advances LTE-U ecosystem

Mobile industry's first small cells with LTE-U

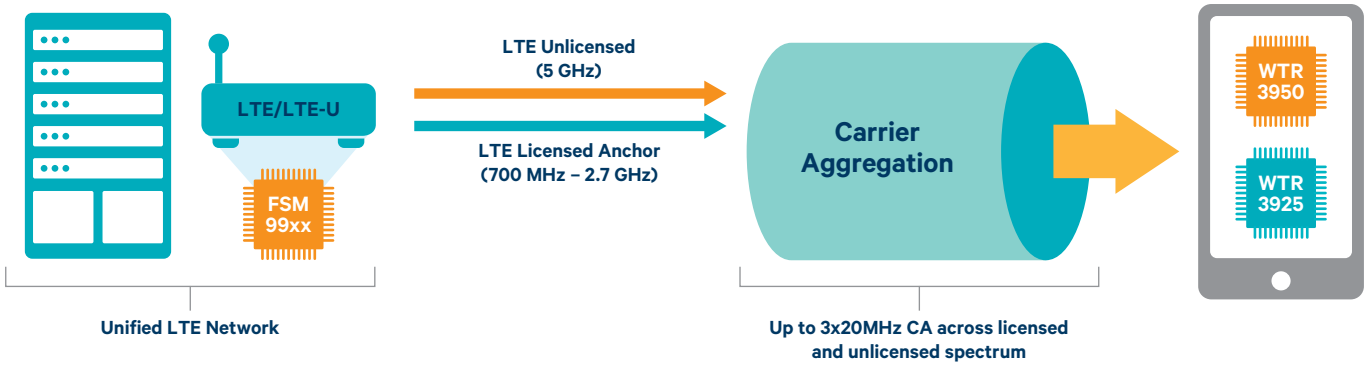
- FSM99xx SoCs with Release 10 based LTE-U for enterprise and metro small cells—expected to be available 2H 2015
- Supports concurrent 3G & 4G operation, multi-carrier 4G with carrier aggregation, and hosted Wi-Fi

RF transceiver with LTE-U for mobile devices

- WTR3950 is the first commercially announced RF transceiver chip for Release 10 based LTE-U—expected to be available 2H 2015
- Pairs with WTR3925 to support up to 3x20 MHz CA across licensed and unlicensed bands

Fair coexistence with Wi-Fi

- QTI successfully completed over-the-air testing to prove fair coexistence between multiple LTE-U and Wi-Fi access points in unlicensed spectrum under extreme load conditions



Key Benefits:

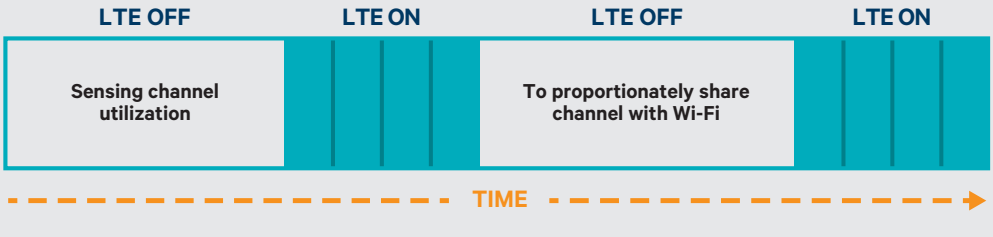
- Enhanced user experience with licensed anchor for control and mobility
- Better capacity and range compared to Wi-Fi
- A good neighbor to Wi-Fi, going beyond minimum requirements to ensure fair coexistence
- Unified LTE network with common management of licensed and unlicensed spectrum

How LTE-U protects Wi-Fi to ensure fair coexistence

Carrier sensing and adaptive duty cycle based transmission (CSAT)

1. LTE-U dynamically chooses free channel to avoid Wi-Fi

2. If no free channel is available, shares the channel fairly using adaptive LTE ON/OFF duty cycle



LTE-U based on Release 10 with fair coexistence features (CSAT) in countries such as USA, Korea, China and India.

Find out more about Qualcomm® LTE-U at qualcomm.com/lte-u