

SDL



QUALCOMM



Supplemental Downlink Demo for FCC Booth slides



May 11 2011



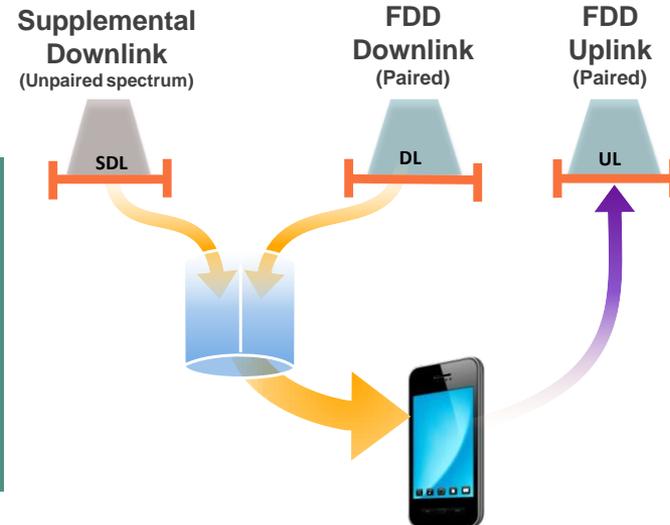
SDL



Supplemental Downlink Helps Ease Spectrum Crunch

- Uses unpaired spectrum for faster downloads & to support more users
- Addresses epicenter of spectrum crunch— more downloads than uploads
- Being standardized for LTE in LTE-Advanced. Demo uses HSPA+.

- QC unpaired Lower 700 MHz D and E spectrum would be bonded with AT&T paired spectrum on which AT&T has deployed LTE (not 700 MHz), if ATT-QC deal is approved.
- Demo uses 2 x 5 MHz of AWS-1 paired spectrum & 5 MHz of unpaired spectrum at 1.4 GHz.

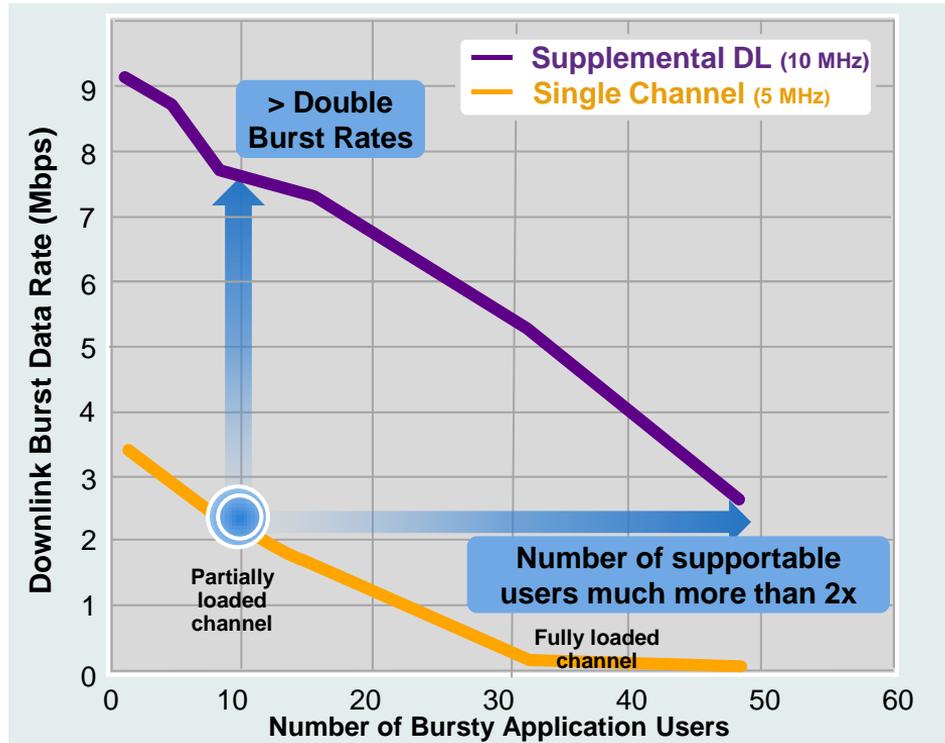
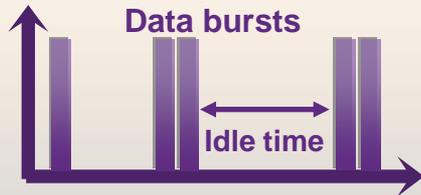


¹Aggregation across bands already supported in 3GPP R9, but each additional band combination has to be defined in 3GPP.

²L-Band in Europe:1452 MHz to 1492 MHz.

Supplemental Downlink Supports Faster Downloads, More Users & Enhances the User Experience

Bursty Data Applications



Qualcomm simulations. 16 R99 users on anchor channel and varying data users on 5MHz single or on 10MHz SDL channel 1km ISD, PA3, Pilot Power = 10% Other Overhead Power = 20%. R99 user power consumption = 20%. Lower control overhead on the SDL carrier: 10%. The bursty nature means that a multicarrier can support more users at the same burst rate for partially loaded carriers. The gain depends on the load and can exceed 100% for fewer users (less loaded carrier) but less for many users (starting to resemble full buffer).

HSPA+ Supplemental Downlink Demo, With L-Band

AT&T Innovation Center
Washington, DC



Display Computer



Real Time Display and
Control of System
Performance

Equipment Room, San Diego, US

