

A city street at night with tall buildings and a network overlay. The image shows a busy urban scene with light trails from cars and illuminated buildings. A semi-transparent network of white lines and nodes is overlaid on the scene, suggesting connectivity and technology. The overall color palette is dominated by blues and greys, with warm lights from the city.

3rd mmWave RCN Workshop

Panel: State of mmW Technology and Outlook: A View from Industry

Sarah Yost

Senior Product Marketing Manager

Thoughts on mmWave Deployment

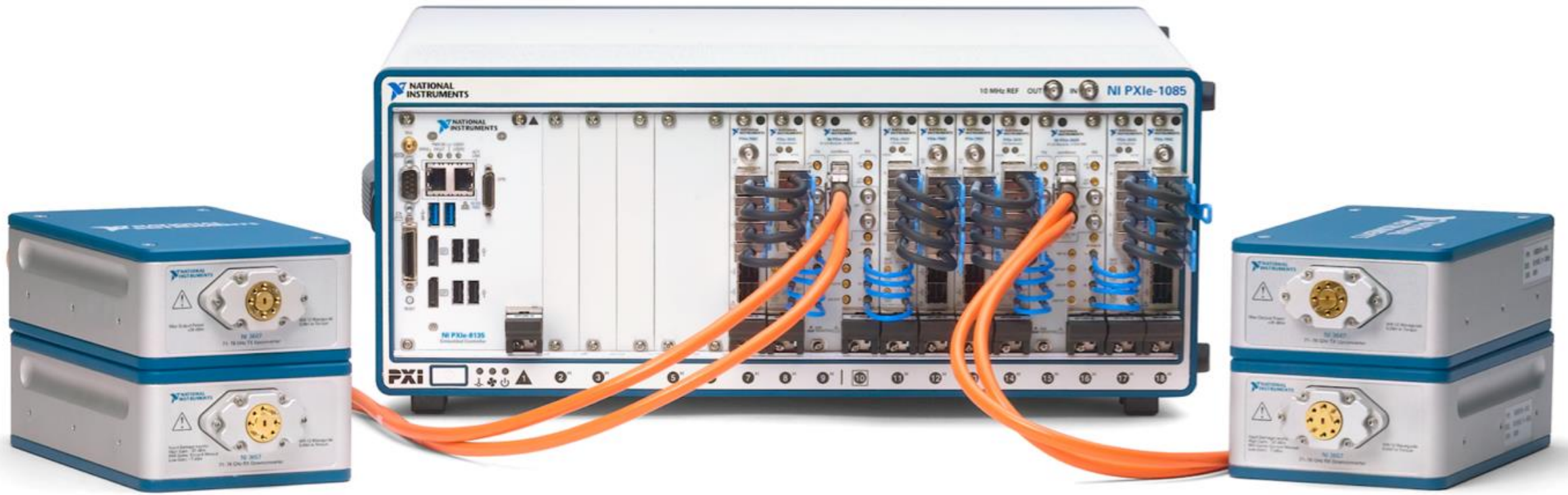
- Events of interest
 - Korea Olympics
 - Mobile World Congress
- Many companies involved in field trials already
- Still a several years away from mmWave available in handsets



Demo from MWC America's Sept 2017:
28 GHz technology from Verizon and Nokia

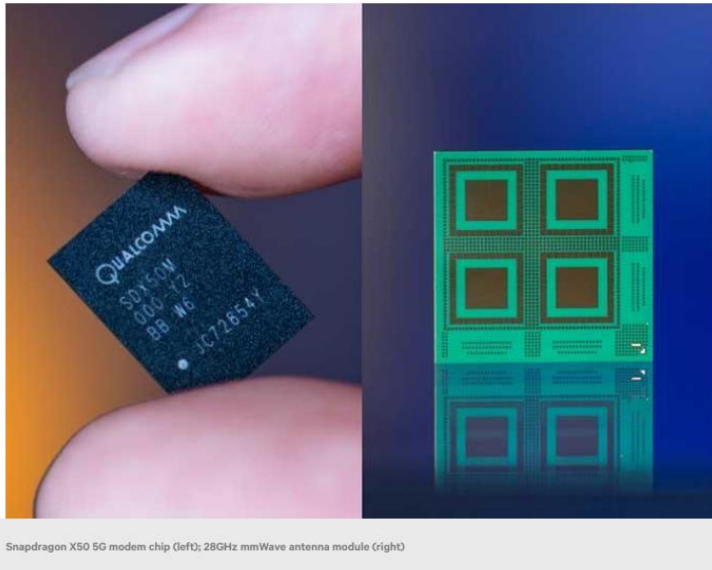
mmWave SDRs

- **Available now!**
 - 27.5-29.5 GHz
 - 57-64 GHz
 - 71-76 GHz

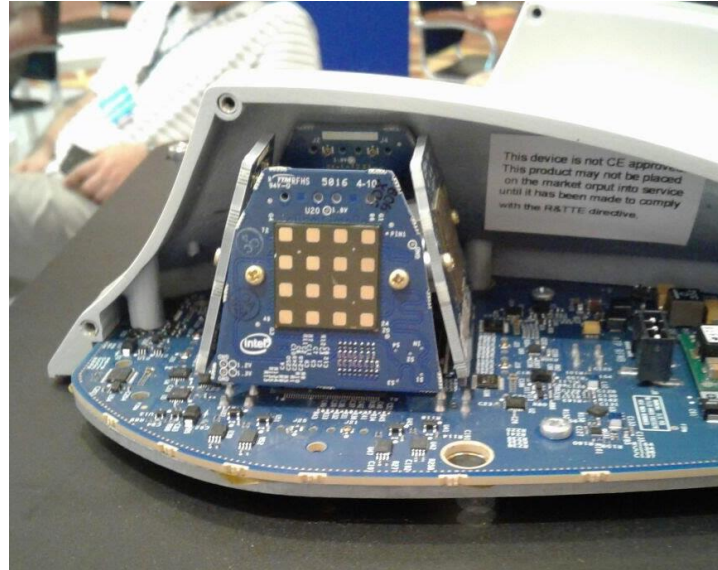


mmWave (lower cost) SDRs

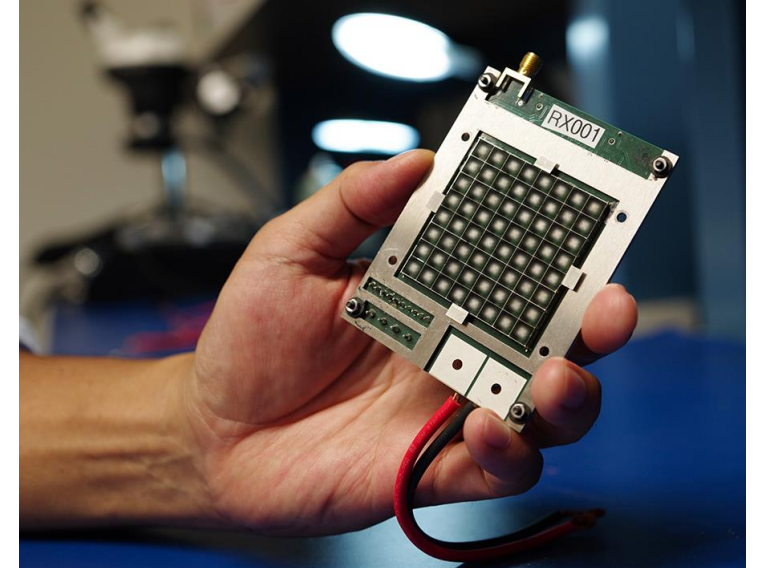
- 5G NR mmWave initial modems becoming available from Qualcomm, antenna modules Intel and from Broadcom spinoff Movandi



Qualcomm 28 GHz chips



Intel's eval board, shown at Globecom Dec 2017



Movandi's transceiver board with integrated antenna

- High speed DACs and ADCs price point and form factor becoming attractive for SDRs
- Challenge: more bandwidth = more processing power needed