QUALCOMM 3550-3650 GHz MHz Experiment Proposal

1 Introduction

Qualcomm Incorporated (NASDAQ:QCOM - News) is the world leader in 3G and next-generation mobile technologies. For 25 years, Qualcomm ideas and inventions have driven the evolution of wireless communications, connecting people more closely to information, entertainment and each other. Today, Qualcomm technologies are powering the convergence of mobile communications and consumer electronics, making wireless devices and services more personal, affordable and accessible to people everywhere. For more information, please visit www.qualcomm.com.

2 Experiment Description

Qualcomm is working with partner companies Verizon and Ericsson to evaluate and trial a supplemental downlink LTE system operating in the frequency range of 3550-3650 MHz.

This trial will consist of up to 10 fixed site base stations and up to 50 small cell sites will be located inside the geographic region described in Section 2. The fixed sites will use established antenna sites and the small cells will be located at strategic commercial and/or residential locations. All equipment is prototype R&D hardware controlled by Qualcomm or partner companies.

The intent is to operate the LTE downlink 24 hours per day 7 days per week.

3 Interference Coordination

Immediate requests for Qualcomm to stop transmission should be emailed to 3.5GHz.trial.shutdown@qualcomm.com. Alternatively, a shutdown requested can be submitted through John Forrester who can be contacted at 858-845-7428 or jforrest@qti.qualcomm.com

In addition, Qualcomm is interested in working with the FCC, NTIA, and other interested federal entities to develop a scheduling and/or notification process using authorized shared access methodology, as described in the Comments of Qualcomm filed on February 20, 2013 in Gen. Docket 12-354, to mitigate interference concerns that may exist quickly and effectively.

Links to Qualcomm Docket 12-354 comments;

- Qualcomm comments 2/20/2012:
  - http://apps.fcc.gov/ecfs/document/view?id=7022123527
- Qualcomm reply to comments 4/5/2013:
  - http://apps.fcc.gov/ecfs/document/view?id=7022138113
- Qualcomm reply to comments 12/05/2013:
  - http://apps.fcc.gov/ecfs/document/view?id=7520960901
- Qualcomm reply to comments 01/03/2014:
  - http://apps.fcc.gov/ecfs/document/view?id=7521064567

4 Transmitter Information

A single downlink RF channel with a maximum transmission bandwidth of 20 MHz will be operated within the requested frequency range at any one time.

The maximum EIRP for small cell and fixed sites is listed in Table 1. The fixed sites and small cells also support MIMO and the defined power is with respect to each antenna element.

Table 2 defines the deployment radiuses where all fixed and small cell sites will be located within during the testing.

Table 1 Transmitter Information

Type	Transmit Frequency (MHz)	Conducted TX Power (dBm)	Maximum Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	ERP (dBm)	ERP (W)	Maximum Transmission Bandwidth (MHz)	Emissions Designator
Small cell	3560-3650	37	6	43	20.0	40.83	12	20	20M00W7W
Fixed	3560-3650	42	18	60	1002	57.8	608	20	20M00W7W

Table 2 Fixed and Small Cell Transmitter Deployment Radius

		Operational Center Point		Fixed Site Location Radius	
Location Description	Location #	Lat	Long	Miles	km
Sorrento Valley (San Diego, CA)	1	32 53 42 N	117 11 42 W	5	8
National City (San Diego, CA)	2	32 40 19 N	117 5 35 W	5	8