

2900-3000, 28 and 60 GHz Experiment Proposal

1 Introduction

Qualcomm Incorporated (NASDAQ:QCOM - News) is the world leader in 3G and next-generation mobile technologies. For 30 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

This experimental license purpose is to extend testing authorized testing granted under STA file 0680-EX-ST-2016 granted May 19, 2016. There are no changes to the technical parameters or test goals defined below in the original STA filing.

Qualcomm is working with partner companies to develop equipment that will use multiple technologies, including 2.9 to 3, 28, and 60 GHz millimeter wave bands.

The experiments will include point to point and non-line of site operation. Part 101.103 frequency coordination will be completed to constrain operations within the worst case parameters defined in Section 2.

The purpose of this request is to support of research and development efforts for large bandwidth wireless communications systems. This initial short term testing is associated with propagation testing characteristics of millimeter frequencies for the purposes of mobile communications.

A single mobile transmitter will be positioned at specific locations within the defined operational radius. Only one transmitter with an omni directional antenna is active during the test times. A receive unit will measure the received signal at different locations. The transmitted signal is a direct sequence spread spectrum - noise-like - signal (PN sequence length 1023 - 30dB spreading) spread over the band 100MHz without discernible specific components for a power density of -15dBm/100kHz. If evaluated in a narrow-band the entire signal power can be treated as noise uniformly spread over the band. Thus, a narrowband receiver can capture only a proportionally small portion of the transmitted power.

The intent is to operate the evaluation devices, both small cells and mobile units, 24 hours per day 7 days per week during the test period.

3 Interference Coordination

Immediate requests to stop transmissions under this experimental license should be emailed to 5GHz.trial.shutdown@qti.qualcomm.com. Alternatively, a shutdown request can be communicated to John Forrester at 858-845-7428 or jforrester@qti.qualcomm.com.

4 Transmitter Information

Testing is expected to occur periodically for 12 months from license issue date. Table 1 contains transmit power information for the test sites. Table 2 lists the site locations and azimuth.

The mobile transmission will occur at lower transmit power anywhere within the radius identified.

Table 1 Transmitter Information 2.9-3, 27.5-30, 57.5-64 GHz

Frequency (GHz)	Peak EIRP			Peak ERP (W)	Peak Antenna Gain (dBi)	3dB Beamwidth	Maximum Emission BW	Emissions Designator
	dBm	dBW	W					
2.9-3	12.79	-17.21	0.02	0.01	0	TBD	100 MHz	100MG7D
27.5 - 30	55	25	316	192	30	8 degrees	850 MHz	850MG7D
57.5-64	30	0.02	1.01	0.61	0 (or conducted power reduced to achieve equivalent EIRP)	TBD	200 MHz	200MG7D

Table 2 Transmitter Site Information

Site #	Address	County	Lat	Long	Peak Antenna gain Azimuth (Deg)	Elevation	Antenna Type
1	South Plainfield 6000 Hadley Rd.: Within 0.5 km	Middlesex	40°33'16.6"N	74°25'47.5"W		6m	Omni-directional