Qualcomm

3.7-4.2 GHz Experiment Description

1 Introduction

Qualcomm's technologies powered the smartphone revolution and connected billions of people. We pioneered 3G and 4G – and now we are leading the way to 5G and a new era of intelligent, connected devices. Our products are revolutionizing industries, including automotive, computing, IoT, healthcare and data center, and are allowing millions of devices to connect with each other in ways never before imagined. Qualcomm Incorporated includes our licensing business, QTL, and the vast majority of our patent portfolio. Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, all of our engineering, research and development functions, and all of our products and services businesses, including, our QCT semiconductor business. For more information, visit Qualcomm's website, OnQ blog, Twitter and Facebook pages.

This experimental license application request is in support of Qualcomm's 5G R&D test networks operating within the frequency range of 3.7-4.2GHz in two locations providing coverage in a small area approximately 0.3km.

2 Experiment Description

This experimental license is critical for Qualcomm to develop applications for 5G technology wireless communications systems.

Using directional fixed site antennas, the 5G network is designed to generate the smallest amount of RF interference to incumbents in the requested frequency range while also providing the RF coverage area required for engineering development. After the license is granted, Qualcomm will notify C-band licenses identify in the FCC license database to obtain consent.

Two fixed locations with directional antennas are requested in the application to provide the RF coverage area to a maximum of 20 mobile devices. The base stations use directional antennas and mobile devices are n78 5G devices with omnidirectional antennas with a maximum transmit power of respectively 45dBm and 25dBm EIRP. The intent is to operate the networks 24 hours per day, 7 days per week through the duration of the experimental license.

The test networks utilize a single TDD 100 MHz channel bandwidth transmitted in the range of 3700-4200 MHz. Both fixed and mobile transmitters use OFDM modulation with a FCC emission designator of 100MW7W. Table 1 describes the technical parameters of the

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transmitters. The base station is considered an omnidirectional source since there are no orientation constraints.

Transmitter Information in the frequency range of 3.7-4.2 GHz

County	Address	Longitude Latitude	Transmitter Type	Antenna Type	EIRP / 100 MHz [dBm]	EIRP / 100 MHz [W]	ERP / 100 MHz [W]	Azimuth (Deg)	Down tilt (deg)	3dB BW (deg)
San Diego	5225 Morehouse Drive (M)	32 53 38 N 117 11 53 W	Fixed	Directional	45.2	33.16	31.92	32	18	+/- 65
			Mobile	Omni	25	0.3	0.19	N/A	N/A	
	5770 Morehouse Drive (BC)	32 53 50 N 117 11 47 W	Fixed	Directional	35	33.16	31.92	199	13	+/- 65
			Mobile	Omni	25	0.3	0.19	N/A	N/A	

3 Points of contact to stop transmission

The following points of contact are available as a stop buzzer:
Email: transmitter.shutdown@qti.qualcomm.com (include the band and location).

Alternative contact:
John Forrester
Phone: 858-845-7428 (24 hours)
Email: jforrest@qti.qualcomm.com