6 GHz Experimental License Application

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 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.

Qualcomm is requesting an experimental license to support low power indoor 5G R&D tests using prototype access points (AP) and client mobile devices in the frequency range of 5,925-7,125 MHz in support of development, validation, and demonstration of new technology.

2 Transmitter Information

Experimental tests will be conducted inside the two buildings shown in figure 1 using 4 wall-mounted access points and 3 lower-power client devices (not shown) to form 2 independent networks, one for each building.

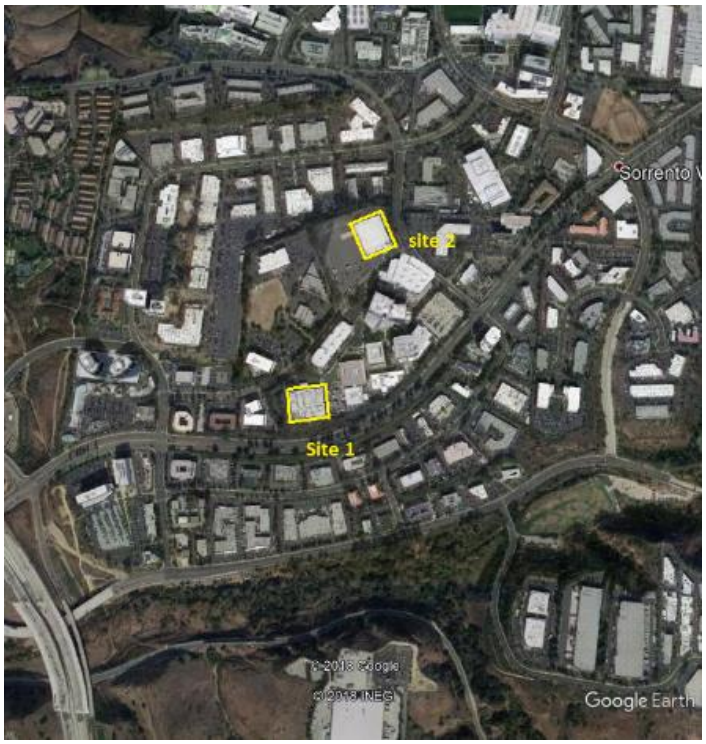

Figure 1. Sorrento Valley, San Diego, CA region of operation.

Each building network comprises four access points using 120-180° single-sector downward tilting antennas arranged on the walls and pointed to illuminate the building floor where 3 mobile client devices operate.

All transmitters will operate at a common center frequency using their own 400 MHz wide TDD carrier signal and radiate a maximum eirp of 24 dBm each. It is proposed that a single center frequency with a 400 MHz carrier bandwidth will be identified for the testing.

The buildings attenuate the signals to the outside by a minimum of 10 dB. Interference with incumbent services is not anticipated given the low EIRP of the equipment and additional minimum of 10dB building attenuation.

Table 1 indicates the sites and antenna information and table 2 defines the transmitter information.

Site addresses	County	Latitude	Longitude	Height above terrain	Nominal beam shape
Site 1 5525 Morehouse Drive Site 2 5770 Morehouse Drive San Diego, California, 92121-1710	San Diego, California	32°53'37.48" N	117°11'51.88" W	<3m both	AP: 120-180° H Client 360°H vertical +/-120°
		32°53'52.51" N	117°11'46.71" W		
		within the internal perimeters marked by yellow contours in figure 1			

Table 1 Site and antenna information

		Peak EIRP					
Type	Center Frequency (GHz)	dBm	dBW	W EIRP	mW ERP	Emission designator	Signal /multiplexing
Access point (up to 4)	5.925-7.125	24	-6	0.250	150	400MW7D	5G NR / TDD
Client Mobile Device (up to 3)	5.925-7.125	24	-6	0.250	150	400MW7D	5G NR /TDD

Table 2 Transmitter Information

3 Interference Coordination

Immediate requests for Qualcomm to stop transmission should be emailed to qualcomm.transmitter.shutdown@qualcomm.com. Alternatively, a shutdown request can be communicated to John Forrester of Qualcomm who can be contacted at 858-845-7428 and jforrest@qti.qualcomm.com.