

3.7-3.8 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 engineering, research and development functions, and 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 conducting 5G R&D tests using prototype base-station (BS) and mobile device equipment in the C-bands and is requesting this experimental license to assist it further in the development, validation, and demonstration of this new technology.

2 Transmitter Information

Experimental tests will be conducted within the interior of the Qualcomm building shown in red contour in figure 1 and described in table 1.

Eight low-power, base-stations located on the ground floor inside the building will form a short-range network for communication to up to 8 mobile devices.

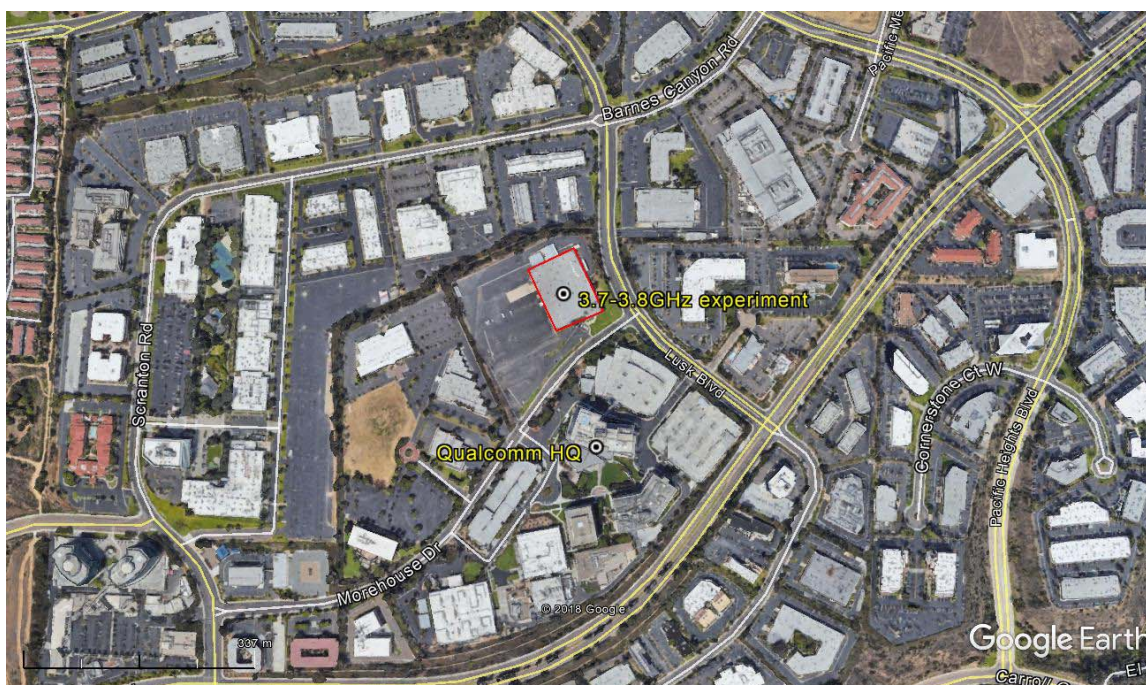


Figure 1. Sorrento Valley, San Diego, CA region of operation.

Each base-station transmitter uses an omnidirectional antenna that will illuminate small service areas for reception by mobile devices over a range of less than 17m. The building provides substantial RF shielding to and from outside signals.

The carrier center frequencies of the base-stations and mobile devices will be fixed at 3.750 GHz and occupy the band: 3.700-3.800 GHz with a TDD 5G New Radio (NR) signal that can vary its bandwidth up to a maximum of 100 MHz.

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

Address of transmitters	County	Latitude (center)	Longitude (center)	Nominal beam shape and gain
Qualcomm Building BC 5770 Morehouse Drive San Diego CA 92121	San Diego, California	32°53' 52.15" N	117°11'46.74" W	
		8 base-stations are located inside the red-contour of the building which is centered on the above coordinates		Omni-directional, 0dBi gain
		8 mobile-stations are located inside the red-contour of the building which is centered on the above coordinates		Omni-directional, 0dBi gain

Table 1 Site and antenna information

Type	Center Frequency (GHz)	Peak EIRP			W ERP	Emission designator	Signal /multiplexing
		dBm	dBW	W EIRP			
Experimental Base station (up to 8)	3.750	30	0	1	1	100MW7D	5G NR / TDD
Experimental Mobile Device (up to 8)	3.750	23	-7	0.2	0.2	100MW7D	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.