



3300-3550 MHz Experimental License Application for 5G Testing

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 previously unimagined.

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.

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This experimental license request is in support of a small 5G system consisting of one 5G base station and one 5G enabled unmanned aerial vehicle ("UAV" aka drone) development device. The requested frequency range of 3300-3550 MHz is for technology development purposes only and not targeted for future wireless communication UAV deployments in the United States.

2. Experiment Description

A single 5G base station will be located at ground level (i.e., 0 ft AGL) with an omni directional antenna mounted on an antenna mast. A 5G enabled drone will communicate with the base station on a 100 MHz 5G channel and operate within 0.5 miles at a max altitude of 400 feet.

The transmitter location and parameters are shown in Table 1. The test network utilizes a single TDD 100 MHz channel bandwidth transmitted in the range of 3300-3550 MHz at a fixed center frequency. This experimental license requests a frequency range wider than a 100 MHz frequency span to provide center frequency flexibility if needed to address technical or interference challenges that may occur during testing. Both fixed and mobile transmitters use OFDM modulation with an FCC emission designator of 100M00W7W.



Table 1 Transmitter Information in the frequency range of 3.3-3.550 GHz

Site Name	Longitude Latitude	Azimuth [°]	Total Tilt [°]	EIRP / 100 MHz [dBm]	EIRP / 100 MHz [W]	ERP / 100 MHz [W]
Great Falls, Montana	47°30'04.4"N 111°26'16.2"W	Omni	Omni	47	50	30.5
Mobile Devices	0.5-mile radius	Omni	Omni	26	0.40	0.24

3. Points of contact to stop transmission

The following points of contact are available as a stop buzzer:

Email: transmitter.shutdown@qti.qualcomm.com.

Alternative contact:

John Forrester

Phone: 858-845-7428

Email: jforrest@qti.qualcomm.com