132.5 – 147.5 GHz Experiment License Modification Description

1. Introduction

Qualcomm is the world's leading wireless technology innovator and driving force behind the development, launch, and expansion of 5G. When we connected the phone to the internet, the mobile revolution was born. Today, our foundational technologies enable the mobile ecosystem and are found in every 3G, 4G and 5G smartphone. We bring the benefits of mobile to new industries, including automotive, the internet of things, and computing, and are leading the way to a world where everything and everyone can communicate and interact seamlessly.

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, substantially all of our engineering, research and development functions, and substantially 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 modification is in reference to the original file number 0973-EX-CN-2021 that was granted on 1/26/2022 with call sign WM2XGH. Note that this modification description is utilizing the original experiment description, with all modifications to the original experiment description appearing in blue font.

This experimental modification is to add the Qualcomm Bridgewater, NJ, office location as an outdoor/indoor test site for mobile transmitters.

2. Experiment Description

This experimental license would allow Qualcomm to develop new wireless communications systems technologies for the operating range of 132.5 - 147.5 GHz in SanDiego, California.

Prototype transmitters and receivers will be located at the locations provided in Table 1 below. Higher power transmitters will be fixed and located indoors and outdoors. Mobile devices will operate within the coverage range of the transmitter. Transmission BW is comprised of 4 subcarriers at 2.5 GHz each using OFDM modulation. Fixed site transmitters will use beam steering antenna arrays.

In the Bridgewater location, testing will be done indoors and outdoors using mobile transmitters. The range of transmitter movement will be within 1 mile radius of the Bridgewater facility.

Site Name	Latitude (dms)	Longitude (dms)	Height (m)	Azimuth (deg)	Tilt (deg)
BLDG QRC	32° 53' 45.24" N	117° 11' 41.64" W	9.2	230	-15
BLDG T	32° 53' 42.36" N	117° 11' 45.24" W	31.3	0	-20
BLDG N	32° 53' 42.72" N	117° 11' 46.32" W	3.5	75	-5
Bridgewater, NJ	40° 35' 16" N	74° 37' 41" W	3m	Omni	0

TABLE 1: Transmitter site locations

Each transmitting station will operate over the air within the technical specifications provided in Table 2 below.

Location	EIRP (dBm)	EIRP (W)	ERP (W)	Max Tx BW	Beam Width – Azimuth (deg)	Beam Width – Elevation (deg)	Modulation
San Diego	65	3,162	1,198	10 GHz	+/- 60	+/- 60	OFDM
Bridgewater	20	0.1	0.061 (61 mW)	10 GHz	Omni	Omni	OFDM

TABLE 2: Transmitter OTA specifications

The experimentation will be conducted 24/7.

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