

24 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 plans periodic 5G R&D test and demonstrations in frequency range of 24.250 -25.250 GHz and is requesting an experimental license to support the activities in the United States. The 5G activities are often for short periods of time at different locations anywhere in the United States. Prior to transmission, Qualcomm will coordinate and obtain appropriate authorization from the respective spectrum licensee.

2 Transmitter Information

5G R&D and demonstration tests will be conducted in a number of locations throughout the USA using commercial or experimental TDD millimeter wave equipment. Typical setups consist of 1 to 4 base stations and up to 20 user equipment devices as described in Table 1. Qualcomm will have full control over the experiments and associated hardware. The transmission BW will be 400 MHz or less and the systems will support non-continuation carrier aggregation (e.g. can transmit a 200 MHz channel BW and a 400 MHz channel BW on different center frequencies within the requested ranges.

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

Control of transmitters	County	Location of the transmitters	Description
Qualcomm	Various	Selection locations in US states or territories	Base-stations with use highly directional antenna pointed towards the ground to cover small service areas

Table 1 Site and antenna information

Frequency range (GHz)	Device Type	Peak EIRP				Emission designator
		dBm	dBW	W EIRP	W ERP	
24.25-24.45 24.75-25.25	Base	65	35	3162	1919	200MW7D 400MW7D
	User Equipment	54	24	251	152.4	

Table 2 Transmitter Information for an R&D/Demo Project**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.