

QUALCOMM 700 MHz Experiment Description

1 Introduction

QUALCOMM Incorporated (www.qualcomm.com) is a leader in developing and delivering innovative digital wireless communications products and services based on CDMA and other advanced technologies. Headquartered in San Diego, Calif., QUALCOMM is included in the S&P 500 Index and is a 2007 FORTUNE 500® company traded on The Nasdaq Stock Market® under the ticker symbol QCOM.

QUALCOMM will perform developmental testing and demonstration of new R&D technologies using 700 MHz frequencies. This experimental license will allow testing of, but not limited to, mobile TV technology and LTE.

The application captures information for three locations:

- 1) San Diego County
- 2) Mountain Top Site in San Diego
- 3) Continental United States (CONUS) for low power demonstration purposes.

Given the rapid development of next generation wireless systems, QUALCOMM requires a flexible experimental license for the 700 MHz band that allows testing of different technologies and the ability to quickly change network configurations as technical requirements change. Qualcomm also routinely supports demonstrations for government and private entities and requires the ability to support these demonstrations on short notice.

Qualcomm has two similar flexible experimental licenses for the cellular band (call sign KM2XJY), PCS band (call sign KK2XBJ), and the AWS band (call sign WE2XFO). Since 1992, Qualcomm has successfully worked closely with the licensed spectrum owners to coordinate usage and allow experimental activities without impacting commercial licensed services. Where necessary, these coordination efforts have included formal interference analysis reports from 3rd parties that result in carefully designed RF networks to prevent interference to commercial services.

2 Experiment Description

2.1 San Diego Country

Primary R&D efforts will occur in San Diego where three to seven fixed sites will be installed and mobiles will operate within the RF coverage area. The test networks will mainly be located within a 5 miles radius of Qualcomm's campus in San Diego centered at Latitude=32°53'42.25"N; Longitude=117°11'42.70"W. Other sites may be deployed in San Diego as needed.

The parameters listed in section 3 represent the full tunable frequency range and maximum desirable transmit power for the proposed testing. The actual network implementation used for R&D testing or demonstrations will be derived from the results of frequency coordination and interference analysis efforts.

2.2 Mountain Top

A MediaFLO single transmitter will be deployed on a commercial antenna structure on Black Mountain located in San Diego (Black Mountain: latitude=32°58'54.16"N, longitude=117° 6'56"W). This site will utilize either 710-716 MHz or 740-746 MHz. Qualcomm has previously operated on channel 53 with experimental license call sign WD2XLG, but will transition to the new frequencies after Feb 18, 2009.

2.3 CONUS

Demonstrations will occur at any location within the United States in support of, but not limited to, government agencies, private companies, and tradeshow. These demonstrations are low power setups designed to provide only a small coverage area. Consent with the respective license owner will be obtained prior to any transmission.

3 Frequency, Power, Location Information

Table 1 summarizes the locations, frequencies, and transmit requested in this license application for San Diego. The parameters represent the worst case deployment values for a given site. The actual transmit powers and frequencies used will be depended on R&D requirements, interference considerations, and agreements with the respective license owners. The maximum transmit powers requested in this application are equal or less then that allowed in CFR 47 Part 27.

The maximum occupied bandwidth for each frequency range is 10 MHz but operational bandwidths down to 1.25MHz are possible. The form 442 lists the worst case of 10 MHz. Typical modulation is OFDM.

Table 1 San Diego Country Transmit Frequency and Power Information

Frequency Range	FCC 700 MHz Block Designation	FCC Block BW	TV Channel	Experimental License ERP (W)	Experimental License ERP (dBm)	Experimental License EIRP (W)	Experimental License EIRP (dBm)
698-710	Lower A	6 MHz	52	30	44.8	49	46.9
	Lower B	6 MHz	53	30	44.8	49	46.9
728-757	Lower A	6 MHz	57	2000	63.0	3296	65.2
	Lower B	6 MHz	58	2000	63.0	3296	65.2
	Lower C	6 MHz	59	2000	63.0	3296	65.2
	Upper C	11 MHz	60/61	2000	63.0	3296	65.2
776-787	Upper C	11 MHz	65/66	30	44.8	49	46.9

Table 2 Black Mountain Transmit Frequency and Power Information

Frequency Range	FCC 700 MHz Block Designation	FCC Block BW	TV Channel	Experimental License ERP (W)	Experimental License ERP (dBm)	Experimental License EIRP (W)	Experimental License EIRP (dBm)
710-716	Lower C	6 MHz	54	50000	77.0	82408	79.2
740-746	Lower C	6 MHz	59	50000	77.0	82408	79.2

Table 2 CONUS Transmit Frequency and Power Information

Frequency	Transmitter Type	Experimental License ERP (W)	Experimental License ERP (dBm)	Experimental License EIRP (W)	Experimental License EIRP (dBm)
698-746 MHz	Mobile/Fixed	3	34.8	5	36.9
746-757 MHz	Mobile/Fixed	3	34.8	5	36.9
776-787 MHz	Mobile/Fixed	3	34.8	5	36.9

4 Frequency Coordination

Prior to transmission, QUALCOMM will coordinate with licensees affected by the proposed networks. If necessary, QUALCOMM will complete internal or external frequency analysis to demonstrate R&D or demonstration activities contribute no interference to licensed services.