11.7-12.7 GHz Special Temporary Authorization ("STA") 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 before 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 of our engineering, research and development functions, and 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.

Qualcomm is conducting limited antenna pattern testing of satellite antennas designed for use in the 11.7-12.7 GHz frequency range. The antenna testing requires a large separation distance to gather far field data due to the frequencies and antenna aperture size and cannot be completed in Qualcomm anechoic chamber.

Qualcomm respectfully requests the Commission to grant a STA to enable Qualcomm to complete these important antenna characterization measurements

2 Transmitter Information

Testing is temporary and expected to occur periodically for up to six months while the test setup is evaluated. The transmitter will only be operational during active testing that occurs at any time during the day or week. Qualcomm anticipates a frequency will be active for periods of 10-30 minutes when testing is active.

A small horn antenna, with a selected pattern to minimize interference, mounted and pointed so as to use the building structure to provide additional shielding to back-lobes is shown in figure 1 and 2. Table 1 defines the transmitter information and Table 2 defines the site location.

A single, low-power continuous wave form ("CW"), measurement signal will be transmitted from the site defined in Table 2 at a fixed orientation. The test frequency will be within a set of 16 discrete frequencies within the range of 11.7-12.7 GHz is requested selected to operate between downlink transponder channels.

The equipment under test ("EUT") is a receive antenna that is located on another building as shown in Figure 2. The receive antenna's orientation is moved in a process to evaluate the antenna pattern. As described earlier, different fixed frequencies will be tested at different times to profile the antenna response versus frequency.

Table 1 Transmitter Information

Type	Frequency (MHz)	Peak EIRP			W ERP	Peak Antenna Gain (dBi)	Emission BW
		dBm	dBW	W EIRP			
Fixed	11.7-12.2	36.8	6.8	4.8	2.9	26.8	CW
Fixed	12.2-12.7	36.8	6.8	4.8	2.9	26.8	CW

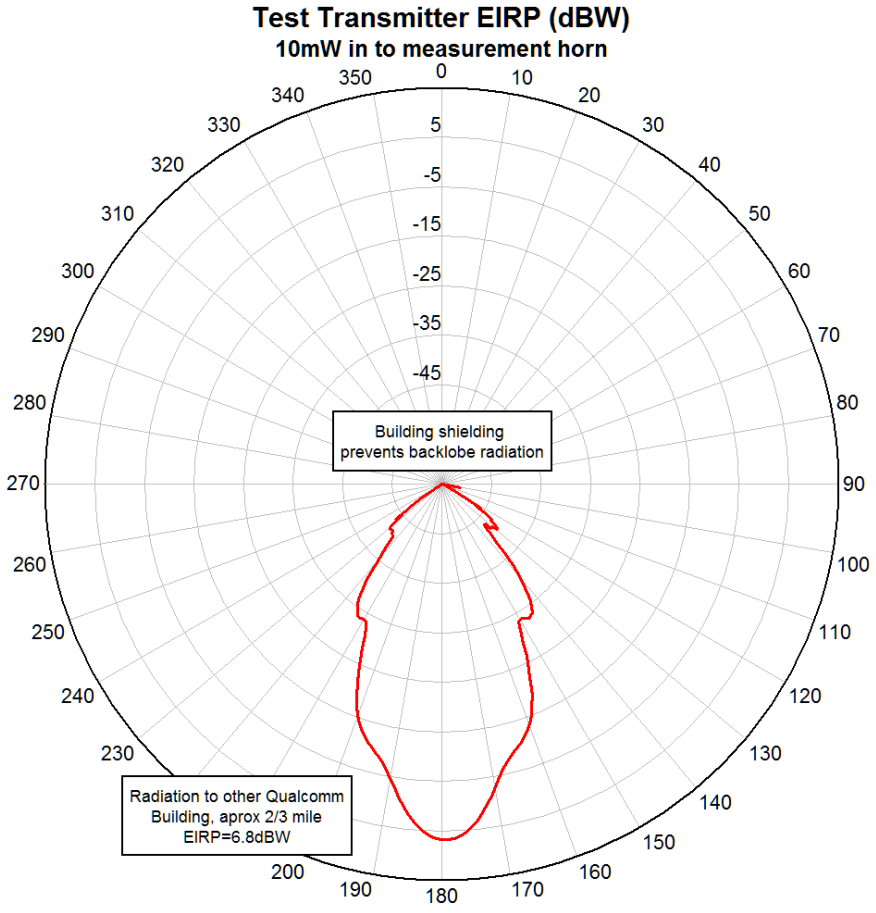

Figure 1 Fixed Site Antenna Pattern

Figure 2 Location of Test horn and transmit path

Table 2 Transmitter Site Information

Site #	Address	County	Lat	Long	3dB Beamwidth	Azimuth	Elevation	Antenna Type
1	5745 Pacific Center Blvd San Diego, CA 92121	San Diego	32 54 14 N	117 11 47 W	+/- 4 degree	175 degrees (south) +/- 2 degrees	+/- 2 degrees above horizon	Directional standard gain horn

3 License Requested

Qualcomm respectfully requests the Commission to grant an experimental license to enable us to start important antenna performance measurements

4 Points of Contact to stop transmission

The following points of contact is available as a stop buzzer.

Email ku.spectrum.shutdown@qti.qualcomm.com; or

Brian Jones
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858 658 4751
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