

# Verizon 3.5 GHz Experiment Proposal

## 1. Introduction

Verizon Communications Inc. (Verizon or the Company) is a holding company that, acting through its subsidiaries, is one of the world's leading providers of communications, information and entertainment products and services to consumers, businesses and governmental agencies. With a presence around the world, we offer voice, data and video services and solutions on our wireless and wireline networks that are designed to meet customers' demand for mobility, reliable network connectivity, security and control. We have two reportable segments, Wireless and Wireline. Our wireless business, operating as Verizon Wireless, provides voice and data services and equipment sales across the United States (U.S.) using one of the most extensive and reliable wireless networks.

## 2. Experiment Description

Verizon is working with partner companies to conduct short-term experimental testing to collect Continuous Wave ("CW") data between 3650-3700 MHz for a propagation modeling study in suburban, urban, and dense urban environments.

The purpose of the proposed tests is:

- 1) Evaluation of the radio path loss characteristics of 3.6 GHz CBRS Band for outdoor installations

Field tests will be conducted in highly controlled field environment, in order to assist in accurate characterization of the propagation environment. The testing will benefit the public interest by enabling the deployment scenarios outside of a lab environment but in a controlled and managed manner.

Verizon has the ability to shut down all transmissions operated under the experimental license in the unlikely event any interference occurs.

## 3. Hours of operation and equipment shut down

The radio units and antennas will be deployed on the structures/outdoor locations. The deployments will be in temporary nature, such that, a test at any location will take a maximum of 12 - 14 hours. Equipment can be shut down speedily, if the need arises, by contacting the interference coordinators identified in the section "Interference Coordination"

## 4. Interference Coordination

Immediate requests to stop transmissions under this STA can be communicated to Sean Daniel, Verizon, at (602)206-1326 or by email at [sean.daniel@verizonwireless.com](mailto:sean.daniel@verizonwireless.com).

## 5. Trial Duration

Approximately two months, beginning approximately on March 04, 2019.

## **6. Evaluation Equipment Transmitter Information**

### **Radio Systems**

The Experiment will include transmitting and collecting CW data using 3.65-3.7 GHz radio systems, with test equipment consisting of a self-contained equipment box with non-experimental transmitter, filters, watt meters, power supply, cabling, and omni-directional antennas up to five feet in height (on top of an existing, temporary, or mobile structure). The equipment box weighs about 45 pounds, is approximately 30" (l) x 30" (w) x 14" (h) in size and is powered from an external A/C power outlet. The maximum transmitter power will not exceed 20W / 43 dBm. The receive equipment does not have the capability to transmit RF signals.

### **Antenna Systems**

The maximum gain of any antenna deployed will not exceed 10 dBi. Furthermore, the main lobe of any antenna used will be pointed approximately to the horizon plus or minus 10 degrees. The azimuthal orientation of the main lobe of the antenna may be arbitrary.

### **Spectrum**

The radio transmitters may occupy spectrum from 3650 MHz to 3700 MHz, transmitting a single narrow band CW channel within that range. The maximum CW channel bandwidth is 10 KHz. No digital modulation will be used.