**Renewal Application for Special Temporary Authority**

**BNSF Railway**
**August 2019**

## NARRATIVE EXPLANATION OF OPERATION AND FREQUENCY COORDINATION

This application seeks renewal of a grant of Special Temporary Authority for research, development, and testing of a 900MHz wireless network utilizing Software Defined Radios (SDR). The applicant, BNSF Railway ("BNSF") is a consumer of wireless RF equipment. BNSF is currently in the process of developing a trackside communications system that will provide higher speed, wireless connectivity along BNSF Right of Way.

BNSF proposes to operate, for a limited time period for test operations, 4 terrestrial test sites along a 100 mile section of railroad track located southwest of Lubbock, Texas. BNSF will install Ondas SDR radios on two existing bases and two trackside mobile sites, utilizing the 900MHz A Block channels. Each site will consist of an external omni antenna connected to the Ondas SDR radio.

The communications system being tested operates on 10 contiguous 12.5 KHz channel pairs at 897.00625 – 897.13125 MHz and 936.00625 - 936.13125MHz. The emission designator for these experimental operations will be 12K5W7D. The trackside mobiles and base station radios will operate at a maximum transmitted power of 45 dBm and at an EIRP of up to 54 dBm.

"Stop Buzzer" contacts for the four base & trackside sites are as follows:
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