

**Application for Special Temporary Authority
BNSF Railway
August 2018**

**NARRATIVE EXPLANATION OF OPERATION
AND FREQUENCY COORDINATION**

This application seeks a grant of Special Temporary Authority for research, development, and testing of a direct trackside broadband system (“DTBS”). The applicant, BNSF Railway (“BNSF”) is a consumer of wireless equipment for various broadband networks. BNSF is currently in the process of developing a trackside communications system that will provide network connectivity along BNSF Right of Way.

BNSF proposes to operate, for a limited time period for test operations, up to 11 temporary fixed terrestrial test sites along a twenty-mile section of railroad track located southwest of Denton, Texas. BNSF will install base station radios on existing trackside towers over this twenty-mile stretch.

Each terrestrial trackside site will consist of two sectors with an integrated antenna connected to each radio. Each sector will have its antenna system configured to minimize and if necessary mitigate any potential terrestrial interference. All operational sectors will transmit during scheduled testing periods and will have their transmitters disabled during non-test periods. This test bed will be used to collect data over the twenty miles of test track between the test locations, in order to assist in the development of the DTBS system.

The communications system being tested is at 2484 to 2494 MHz. The emission designator for these experimental operations will be 10M0G7W. The trackside base station radios will operate at a maximum transmitted power of 30 dBm and at an EIRP of up to 36 dBm, while the mobile user equipment will operate at a maximum transmitted power of 23 dBm and at an EIRP up to 31 dBm.

BNSF’s proposed experimental operations at 2484-2494 MHz will occur in spectrum where Globalstar Licensee LLC and Globalstar USA, LLC (together, “Globalstar”) are authorized for ancillary terrestrial low-power operations under their mobile satellite service (“MSS”) licenses. BNSF’s experimental operations will comply with the applicable power limits for Globalstar’s authorized terrestrial low-power operations. The 2484-2494 MHz band is also utilized by broadcast auxiliary service (“BAS”) licensees in the United States.

“Stop Buzzer” contacts for the eleven terrestrial trackside sites are as follows:

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