

Numerica Corporation

Narrative Statement

Application for Experimental Authority to Test Radar in the 16.2 – 17.2 GHz Band

Numerica Corporation (Numerica) seeks special temporary authority (STA) to test a short-range air defense (SHORAD) radar. The radar is designed to detect unmanned aerial systems (UAS).

Numerica, based in Ft. Collins, CO, has 25+ years of experience supporting the DoD in the areas of space domain awareness, air defense and missile defense. Numerica has been an innovator in counter-UAS SHORAD system development since 2010.

The radar emissions will be constrained to the 16.2 – 17.2 GHz radiolocation band.

The primary testing will be conducted from the Pawnee Sportsmen's Center gun range in Briggsdale, CO, where we can fly drones for full field testing. The station at Fort Collins will be used for brief system checkouts in preparation for longer-duration testing at the gun range.

The radar transmits 64 W of peak power, and has a 33% duty cycle, for 21W average power. The antenna gain is 25 dBi, which leads to an average ERP of 6.66kW (20kW peak). The radar waveform is a standard linear frequency modulated (LFM) pulse train with a pulse duration of 16 us pulse and 64 us pulse repetition interval. The pulse bandwidth is 20 MHz.

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