

EXHIBIT

This application seeks a two (2) year authorization to conduct experimental testing of a waveguide design. The waveguide is not predicted to emit any radio signals; however, actual practical implementations might result in unintentional emissions. The experimental testing will assess the extent and characteristics of such unintentional emissions.

Testing will involve launching a continuous wave (“CW”) excitation into a waveguide at low power (<10 dBm) at various frequencies between 1-38.6 GHz. The experimental operations will be conducted at temporary fixed locations within a 5 kilometer radius of the coordinates 40-21-53N; 74-06-58W (NAD83) in Middletown, NJ.

Waveguide Systems:

A CW excitation will be launched into one or more experimental waveguides. The waveguides are based on electrical wires of the type used by electrical utilities for transporting electrical power via so-called medium-voltage distribution grids. Some wires will be mounted on temporarily installed conventional utility poles in a manner that is customary for such distribution grids. The height of the utility poles will be approximately 11 meters (35 feet) above ground. Other wires will be mounted on support structures that are to be lower than 6 meters (20 feet). No structures will be installed in a fashion that will require approval under FAA and FCC rules and regulations; in particular, no structures will be installed within the proposed 5 km radius of operation that will be closer than 3 km from an active airport, heliport or aircraft landing area.

Test equipment will include one or more programmable sources that generate CW waveforms. Each waveform is to be launched onto a waveguide using a launcher intended to maximize the power fraction launched into guided modes and, thereby, minimize unwanted leakage. Receiving antennas are positioned at several locations to detect and characterize any leakage.

Spectrum:

The CW sources will generate frequencies in the 1-38.6 GHz range, except they will not generate frequencies in any restricted band listed in 47 C.F.R. §15.205. At any given time each source will generate only one frequency. No more than 10 sources will be active at any given time in total at three sites. The sources will be highly stable and accurate; therefore, the spectral width of the generated CW excitation is expected to be less than 10 Hz. If, upon IRAC coordination, any specific frequencies are deemed not feasible, the applicant would accept recommendations to use nearby, alternative frequencies, as those could also yield useful data concerning the performance of the waveguide.

Emissions:

Each CW source would, under no circumstance, generate more than +10 dBm (10 mW) of power; however, most of the time, the generated power will be substantially less than this absolute upper limit. The design of the experimental system is not intended to emit any radio signals, as all the power generated by each of the CW sources is intended to be coupled onto a waveguide. Unwanted leakage may occur nevertheless, and the experimental authority requested

here is intended to allow the applicant to detect and characterize that leakage. The spatial pattern of leakage emissions is difficult to predict and will be determined during testing, but it is unlikely that it will occur in highly concentrated beams. Therefore, the peak effective radiated power (“ERP”) for such emissions should not be much more than the total power sent to the waveguide (*i.e.*, 10 mW).

In the unlikely event that interference should occur, Giovanni Vannucci has been designated the “stop buzzer” for the proposed operations, and he will take steps immediately to remedy any interference, including if necessary discontinuing the experimental operations. Mr. Vannucci can be reached at (732) 420-1790.