Explanation of Experiment

Background:

Vertex Aerospace LLC ("Vertex") is a DoD contractor that integrates radar and radio systems into a variety of defense technologies. As a result, it needs to test radar systems to make advances needed by Vertex's customers using an experimental license.

The current application requests a license for testing of a radar system manufactured by Teledyne FLIR with a ground vehicle. The tests proposed by this application are identical to previous tests conducted under FCC experimental STA call signs WV9XNF and WH2XAQ.

Synopsis:

- Spectrum required: 9.3-9.5 GHz
- Time of use: limited to two minute tests, with only intermittent spectrum use
- Power level: limited to EIRP of 1125 W, signal propagation limited to Vertex property
- Emission Designator: 100MF3N
- Reference: Indianapolis (Marion), IN - NL 39-47-29; WL 86-03-34

Radar System Under Development:

The radar is used to sense ground targets, vehicles and personnel on Vertex property, per the FLIR Ranger RR20SS design parameters. The radar is operated using the power and modulation settings required for the short range mode for safety, reduced interference, and effective operation. The radar will be used to sense ground targets within the Vertex facility at 6125 E 21st street, Indianapolis, IN 46219.

Test Time:

During testing, the time required to create and display multiple targets is less than two minutes. Transmitter use will be intermittent during that period. During the remainder of the testing, the FLIR radar will not be transmitting. For the ongoing testing and development, the radar system is expected to be in use only 120 minutes per day, and only intermittently across those minutes. The duty cycle of the system is less than 10%.

RF Safety Compliance:

Vertex will use its established RF safety Plan for ground vehicle demonstration testing to ensure that no personnel are subjected to RF power density levels exceeding the Maximum Permissible Exposure limits (MPE) set forth in 47 C.F.R. § 1.1310 and the guidelines in FCC

OET Bulletin Number 65. The existing RF safety plan limits the time that the radar system can be tested, it cordons off the test area at a distance of 1.6 meters from the transmitter, which is the only area where the signal strength could exceed the maximum exposure limit, and there are signs posted alerting other Vertex personnel to the testing. The Vertex plant is a secure facility and it is not accessible to the general public. All RF exposure levels will be below the limits set forth in the Commission's Rules, therefore the proposed operations are in compliance with 47 C.F.R. 1.1307(b) of the Commission's Rules.

Stop Buzzer Point of Contact:

The Stop Buzzer Point of Contact for the proposed operations is:

Art Denecke
463-224-1235

Conclusion:

This license application is being filed to allow Vertex's testing the FLIR Ranger R20SS radar system. The testing is expected to continue for twelve months beginning as soon as the license is issued . For questions please contact Brian Kavalar, Spectrum Manager, Vertex, brian.kavalar@vtxco.com or 317-517-9989

Vertex Indianapolis Test Site – Antenna Sketch

North

East