Raytheon Missile Systems
Experimental License Application
File No: 0357-EX-CN-2018

Explanation of Experiment

Overview:

Raytheon Missile Systems builds missile systems and other technology-driven products for US and foreign government customers. Raytheon's primary work is in developing advanced missile systems, and it is currently working to advance the technologies used in its work. The requested radio authorization is for the testing of some of Raytheon's missile systems, in an advanced laboratory setting, to verify that the incorporated radio systems are operating properly.

The current application seeks to extend authorization for use of the automation and safety technologies in the 90-102 GHz band.

Need for STA:

Raytheon's early testing was very productive, and the program is seeking to extend its testing to deliver more efficiencies. This application proposes operations that are the same as those licensed under WM9XAM.

Technical Synopsis:

- Spectrum Needed: 90-102 GHz
- Power Levels requested: output power of 17 mW, ERP of 3.82 W
- Antenna gain and half power beamwidth: 23.4 dBi, 9 degrees
- Operations: Indoors to test antenna patterns

Description of Operations:

The general purpose of the testing is to determine the antenna patterns of W band antennas. This testing will be set up indoors, using a high-gain, directional antenna that will determine the antenna patterns by using the principle of reciprocity.

The testing will use a highly directionalized, low power signal to map the antenna patterns of W Band antennas.

This testing is required to work with those antennas as they are prepared for use in some Raytheon products.

Location of Testing, no likelihood of interference: Testing will be conducted indoors in a facility on the Raytheon plant site. The low power levels of these transmissions at the frequencies required suggests that there will be no signal leakage from the building, which leads to the conclusion that these experiments are unlikely to cause interference with other operations.

Stop Buzzer Point of Contact:

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Conclusion:

Raytheon is undertaking short-term testing of antenna patterns in the 90-102 GHz band to advance the development of some of its products. The testing will be conducted indoors, using a low power, directionalized signal. The testing is unlikely to lead to harmful interference to other users.

If there are any questions about these proposed operations, please contact Anne Cortez, 520-360-0925 or alc@conspecinternational.com.