

Raytheon Missiles & Defense
Experimental License Renewal Application
Call Sign: WG2XVG
File Number: 0598-EX-CR-2021

Explanation of Experiment

Raytheon Missile & Defense (Raytheon) is a US defense contractor that builds missile systems and a variety of radio systems that are necessary for the navigation, target detection, command and control, and communications required when a missile is in flight. These systems are essential to US national security.

Raytheon embarked on a project that is exploring how to adapt commercial, off the shelf marine radar technology into its products. The challenge is to work with this well-developed technology in a new way that could produce advances in missile system performance. The FCC granted Raytheon WG2XVG for this testing. Those operations have proven very productive, and Raytheon is now seeking to renew its authorization to continue experimentation.

Synopsis

- Spectrum to be used: 154.585, 159.480, 160.725, 160.785, 454.00, and 459.00 MHz; 2450-2500 MHz, 2900-3100 MHz, 5470-5650 MHz, 9300-9500 MHz
- Locations: Tucson, Arizona, operations at the Raytheon facility indoors in Bldg 9020 Latitude: 32° 5'41.37"N, Longitude: 110°48'29.79"W , and testing will be outdoors at Point Loma, CA Latitude: 32°40'1.18"N, Longitude: 117°14'22.94"W
- Power levels: .03 watts, with an ERP of 3 watts; these are low power transmissions

Explanation of Experimentation:

Raytheon is using Raymarine marine commercial off the shelf radar systems to enhance the performance of its surface detection technologies. The testing uses the Raymarine technology to improve performance of radar detection at or just below the level of the radar. Initial testing has proven fruitful, and Raytheon is planning a number of advanced applications for the technology.

The testing will be during the work day, with sporadic use of the radar systems. Testing and data collection will be followed by periods of data evaluation. So, the spectrum use will be discontinuous.

Since this license was first granted, there have been no instances of harmful interference, and none are expected as a result of this renewal.

Stop Buzzer:

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Conclusion:

Raytheon is expanding a productive research program to advance the surface detection radar capabilities of some of its missile systems. Ongoing testing requires that Raytheon's license be renewed for the use of commercial off the shelf Raymarine marine radar systems. An experimental license is needed because the radar system will not be used in a marine environment. There is no other license available for this testing, and the testing is specifically focused on development of radar technologies, so it is properly the subject of an experimental license. Because the results of early testing proved productive, Raytheon is now seeking an experimental license to continue this research program.