

Raytheon Missile Systems
Experimental License STA Application
File Number: 2025-EX-ST-2019

Explanation of Experiment and Need for an STA

Raytheon Missile Systems (Raytheon) is the primary missile manufacturer in the US, supplying ordinance ready to operate to the US military. This application seeks authorization for testing of technology that is being developed for national security purposes, to develop weapons systems that keep the US safer. Raytheon's experience with missiles has led its customers to seek UAV technology based on some of its existing platforms and knowledge. This has led Raytheon to the development of advanced UAV technology as well. This application seeks authorization for the use of a variety of radio systems that are used in the development and testing of its advanced UAVs. The radios incorporated into the UAVs support the mission of the UAV testing.

Need for an STA:

Raytheon has been asked to conduct a demonstration for DoD officials November 12-30, 2019. The demonstrations have been scheduled to accommodate the officials' availability. Today, the DoD officials told Raytheon that it needed to complete the spectrum authorization process. Therefore, Raytheon needs an FCC experimental STA for the demonstration.

Technical Synopsis:

Spectrum requested: 1377 MHz, 1379 MHz, and 1382 MHz, emission is 10 MHz wide
Limited time of use: 1-2 hours per day of radio use
Limited area of operations: approximately 3 mile radius on base, maximum 3000 feet elevation
Power levels are low: L band 5.5 W, only 6 W ERP

Description of Operations:

Raytheon will be taking its Coyote UAS platform for testing and demonstrations at the US Army installation in Dugway, Utah. These demonstrations of the Coyote system are intended to illustrate the platform's ability to perform various tasks required by the Army.

This UAV platform has been designed to perform a range of tasks. They include surveillance and monitoring. Those tasks require the UAV to carry a range of radio links to ensure its proper performance. The purpose of this testing is to examine the performance of an L Band data link.

Limited Time of Use:

The UAVs are tested using batteries. The battery life lasts up to two hours. Because the program will need to process test results, they normally only schedule one test per day to take advantage of overnight recharging for the batteries.

Locations of Testing:

The testing will be conducted around the US Army installation at Dugway, Utah. The STA requests authorization for testing at the base, for system check out. The proposed area of operations is shown in *Figure 1* below. The yellow pushpin is the check out and launch site, at the airfield. Airborne operations will be concentrated in the red oval.



Spectrum Use:

L band frequencies: These frequencies are used as datalinks to transmit data while the UAVs are in flight. These radios use a specifically configured frequency within the band. Most of the spectrum will be unused. The radios are programmed for the flights. L band power level is 5.5 W.

Local deconfliction: the program will work with local spectrum managers prior to any flight operations to deconflict radio operations that are local to the area.

Stop Buzzer Point of Contact:

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Conclusion:

Raytheon is seeking an STA for temporary, demonstration operations on base and around desert areas on the Army installation. The demonstrations are to show the development of the Coyote UAV system. The proposed testing will be limited in nature. The radio use will be limited. Furthermore, only one frequency will be in use at any time. The three frequencies were requested to expedite local spectrum coordination.

If there are any questions about this proposed operation, please contact Anne E. Cortez, counsel, Washington Federal Strategies, at 520-360-0925 or alc@conspecinternational.com.