

ELTA North America Request for FCC Experimental License

Modification Form 442 File Number: 0214-EX-CM-2018
Modification Form 442 Confirmation Number: EL355140

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Question 7: Purpose of Experiment

This application is being made to support the testing and evaluation of ELTA radar EL/M-2112. These tests will be conducted to test and verify new radar processing software and algorithms, develop equipment designs, conduct production tests and equipment calibration, and demonstrate products to customers. Tests will be conducted on the roof of ELTA's facility located at 8955 Henkels Ln Annapolis Junction, MD in Howard County. This building is a single-story structure located in a mixed-use business development. The antenna, transmitter, and receiver are mounted on the antenna support structure. Tests will also be conducted at: 4650 South Coach Drive, Tucson, AZ, The antenna for the Tucson tests will be mounted on a tripod located on the ground and in Bandera Gun Club, 809 FM 1077, Bandera, TX 78003, the radar will be mounted on a vehicle mast 6.7 meters high.

Tests and demonstrations will also be conducted at the following locations:

- 1) Mississippi State University, North Farm, Technology Blvd, Starkville, MS 39759 (Oktibbeha County) **Lat:** 33°28'45.27"N **Long:** 88°47'0.29"
- 2) Mississippi State University, North Farm, Technology Blvd, Starkville, MS 39759 (Oktibbeha County) **Lat:** 33°28'13.66"N **Long:** 88°46'6.61"W
- 3) Mississippi State University, South Farm, Unnamed Rd, Starkville, MS 39759 (Oktibbeha County) **Lat:** 33°26'33.85"N **Long:** 88°47'35.27"W
- 4) Mississippi State University, South Farm, 869 E Poor House Rd, Starkville, MS 39759 (Oktibbeha County) **Lat:** 33°24'26.77"N **Long:** 88°47'47.11"W
- 5) Maritime Applied Physics Corporation , 1850 Frankfurst Ave, Baltimore, MD 21266 (Anne Arundel County) **Lat:** 39°14'43.03"N **Long:** 76°34'21.62"W

The antenna will be vehicle mounted on a mast that is 21' above ground level.

It is essential that these tests be performed outside of a laboratory or anechoic chamber to create the necessary radar environment that includes land and foliage clutter, ground moving vehicles, birds, fixed and rotary wing aircraft, second time around radar targets and clutter, and other atmospheric disturbances that affect radar performance.

The EL/M-2112 system is a linear FM CW radar for ground surveillance applications. The system will transmit in the 10250 – 10500 MHz frequency band from a slotted waveguide array antenna. The array has a horizontal beamwidth of 90 degrees and a vertical beamwidth of 3 degrees with a cosecant squared pattern.