ELTA North America Request for FCC Experimental License

Modification Form 442 File Number: 0082-EX-ML-2015
Modification Form 442 Confirmation Number: EL458753
02 May 2015

Reference:

Call Sign: WH2XNE
Original Form 442 File Number: 0710-EX-PL-2014
Original Form 442 Confirmation Number: EL622900

Question 9: Statement of Environmental Impact

ELTA North America (N.A.) will occupy a section of the building located at 11840 West Market Place. Fulton, MD. The building is a new, single-story structure, with multiple bays, and is constructed of concrete block with a web girder and steel pan roof. The surrounding area is a mixed-use development of retail, office, educational, and residential buildings. The adjacent property consists of similar single-story buildings to the north and south of the site, a public school campus to the west, and an open field to the east. Further north is a residential neighborhood and the Johns Hopkins University (JHU) Applied Physics Laboratory (APL) campus. Further east is a small urban development with multistory buildings. The antenna will be mounted on top of a four-to-six foot mast which will be located on the roof. The radar equipment will be remotely controlled from inside the building.

In addition the MARS-K radar will also be operated at various military sites as indicated in the application. The radar antenna at these sites will be located on the ground mounted to a tripod of less than 1.5 m in height.

It is the policy of ELTA N.A. that company personnel, customers, or members of the public are not subjected to RF power density levels that exceed the Maximum Permissible Exposure (MPE) limits as given in Part 1.1310 of the FCC Rules. Experimental testing will only be conducted with appropriate controls in place, and no personnel will be on the roof during transmissions that will exceed the MPE levels. ELTA will have an RF Safety Plan which describes the procedures and controls necessary to comply with MPE levels during operations and maintenance.

ELTA N.A. conducted a worst-case analysis of power density levels in the area surrounding the transmitting antenna based on the FCC's OET Bulletin Number 65[1]. The applicable radar parameters and results are shown in Tables 1 and 2, respectively. For the Fulton location, with a building height of approximately 19 feet and a width of 86 feet, the line-of-sight distance to a six-foot person standing on the ground is 184 feet. This assumes that the antenna center is 4 feet above the roof. Consequently even under worst-case conditions personnel on the ground will be beyond the distance where the power density exceeds the MPE limit.

[1] Cleveland, Robert F., et al., *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*, Edition 97-01, OET BULLETIN 65, Washington D.C.: Federal Communications Commission, Office of Engineering and Technology, August 1997.

For the other planned demonstration sites, which will have controlled access, all personnel will be required to maintain a minimum of approximately 14 feet from the antenna.

Table 1. — Power Density Analysis

Parameter	Value
Operational frequency, MHz	9800
Transmitter output power (peak), W	32
Maximum transmitter duty cycle, %	10
Antenna gain (mainbeam), dBi	31
Ground reflection factor	1.6

Table 2 — Power Density Analysis Results

Parameter	Controlled	Uncontrolled
Maximum Permissible Exposure, mW/cm'	5.005	1.005
Minimum required distance, meters	4.07	9.07
Minimum required distance, feet	13.3	29.77