AeroVironment, Inc.
Application to Modify Experimental License WL2XDW

Statement in Support of Application to Modify Experimental License WL2XDW

AeroVironment, Inc. (AV) designs, develops, manufactures, supports and operates unmanned aircraft systems ("UAS"). As part of the engineering and production process, AV tests the UAS communications systems to make sure specifications are met and to learn how it can better serve its customers.

The purpose of this modification is to examine UAS performance within the 2380-2390 MHz band, which is part of the M4 channels of AeroVironment's digital data link (DDL) technology. AeroVironment requests authority to perform such testing from the sites noted below, which currently authorize access to 1840-1850 MHz under WL2XDW.

Locations

AeroVironment proposes to access the 2380-2390 MHz segment at the following locations authorized under WL2XDW:

Location # 1- Mobile ground-based locations within 8 km of center, N 42° 41' 44" W 71° 33' 06", Pepperell Airport, Pepperell, Middlesex County, MA, near 165 Nashua Road.

Location #2- Airborne UAS operations, 8 km center 152.4 meters AGL, N 42° 41' 44" W 71° 33' 06" Pepperell Airport, Pepperell, Middlesex County, MA, near 165 Nashua Road.

Location #3- Mobile ground-based locations within 8 km of center, N 42° 38' 25" W 70° 49' 34", South Hamilton, Essex County, MA, near 317 Sagamore Street.

Location # 4- Airborne UAS operations, 8 km of center, 152.4 meters AGL, N 42° 38' 25" W 70° 49'34", South Hamilton, Essex County, MA, near 317 Sagamore Street.

Location # 5- Laboratory Operations, N 42° 32' 21" W 71° 09' 23", 201 Lowell Street, Wilmington, Middlesex County, MA

Location # 6- Laboratory Operations, N 42° 28' 40" W 71° 11' 36", 114 South Bedford Street, Burlington, Middlesex County, MA

Technology

This application proposes flight and laboratory testing of the Microhard pDDL 900 embedded wireless data transceiver. This frequency-hopping spread-spectrum module provides wireless data transfer within the network.

The communications module will use the 2380-2390 MHz band segment to send ground based command and control data to and from the aircraft and to transmit video and telemetry to the ground control station. Transmission control will be from the ground control station to the aircraft via a laptop, console or tablet.

Antenna

Antenna	**Gain Nominal**	**Polarization**	**Orientation in Vertical Plane**	**Orientation in Horizontal Plane**
Ground Control Station: MobileMark PSGN-2000S SP 435 Omnidirectional	3dbi	Vertical		360
Aircraft: Video Aerial Systems Omnidirectional Diamond	2.5dbi	Vertical		360

Deference to Licensed Users

AeroVironment commits to operations respecting other users of the band and those in adjacent segments. Should any interference occur, AeroVironment will take immediate steps to resolve the interference, including, if necessary, discontinuing operations.

Only one aircraft will be airborne at any time, tests will be conducted intermittently.

Stop Buzzer

Bart Decker, Flight Standards Manager, is available by telephone at (805) 391-1335 and electronic mail Decker@avinc.com and will act as a "stop buzzer" if any matters involving interference arise during the testing.

Request for Waiver of Station Identification

AeroVironment asks for a waiver of the station identification requirements stated in Section 5.115 of the Commission's rules.

Diagram

A diagram of the proposed flight operations follows.

AeroVironment values the work and consideration of the Commission, NTIA and coordinating agencies. Please call upon us with any questions.

Operations Diagram

Small Unmanned Aircraft

Video and Telemetry 2380-2390 MHz

Aircraft Command and Control and Backup 2380-2390 MHz