AeroVironment, Inc.
Application for an Experimental License

Statement in Support of Application for Experimental License

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. In this application, AV seeks authority to conduct radio tests in the 1840-1850 MHz band segments at flight locations in Pepperell, MA and South Hamilton, MA. Authority to conduct laboratory tests at AV facilities in Burlington, MA and Wilmington, MA is also requested.

The tests support AV's work for the Department of Defense, US Army, to develop performance specifications supporting UAS contribution to the Army's Short Range Reconnaissance Program. Intelligence, surveillance, and reconnaissance functions are principal elements the US military seeks to enhance via UAS acquiring and processing information.

Technology

This application proposes flight and laboratory testing of the Microhard pDDL 900 embedded wireless data transceiver. Operating in the 1840-1850 MHz segment, this frequency-hopping spread-spectrum module provides wireless data transfer within the network.

The communications module will use the 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, test will be conducted intermittently.

Stop Buzzer

Bart Decker, Flight Standards Manager, is available by telephone at (805) 391-1335 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

1840-1850 MHz

Aircraft Command and Control Main and Backup

1840-1850 MHz