

The Boeing Company

Request for Experimental License Exhibit

Independent Research and Development

Updated and Submitted 10/28/2014

by

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Why an Experimental License is necessary

The Boeing Company requests an experimental license in order to test various components used in research and development of unmanned aircraft systems (UAS).

Purpose of Operation

The purpose of the experimental license is to test radio frequency (RF) components that will be integrated into the UAS. These components include a command and control uplink and downlink system used to control the UAS and a video telemetry system that will allow a ground station to view a video stream from the UAS.

Test Description

The UAS system will be operated at the Pacific Missile Range Facility (PMRF) in Barking Sands, Hawaii. The configuration includes a ground station and a small UAS. The ground station transmits command and control uplink signals to the UAS and receives video data from the UAS. The UAS transmits command and control downlink data and video data to the ground station. The UAS will be flying during the test.

Timely Response Appreciated

Boeing will greatly appreciate a determination as quickly as possible to meet the directive schedule.

Location

PMRF, Barking Sands (Kauai County), HI
22° 01' 37"N
159° 47' 11"W
WGS84/NAD83



Figure A – PMRF Barking Sands, Hawaii Test Site

Schedule

The requested OET license is to be effective for 2-years upon a grant from the FCC/OET. Operations will be anytime, 24 hours a day, 7 days a week, within a 30 kilometer radius of given location as necessary. Altitude (Flight Level) of UAS will be up to 10,000 feet (3048 meters).

Stop Buzzer Contact Information

The equipment will be operated by Boeing employees.

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Frequencies, Power and Emission

Purpose	Frequency (MHz)	Emission Designator	Peak Power (ERP)
Command & Control Downlink	902-928	230KF1D	1 Watt
Command & Control Uplink	902-928	230KF1D	1 Watt
Video Downlink	2410.75	16M0F3F	2 Watts
Video Downlink	2433.75	16M0F3F	2 Watts
Video Downlink	2452.75	16M0F3F	2 Watts
Video Downlink	2462.75	16M0F3F	2 Watts
Video Downlink	2472.75	16M0F3F	2 Watts
Video Downlink	2486.00	16M0F3F	2 Watts
Video Downlink	2490.00	16M0F3F	2 Watts
Video Downlink	2495.00	16M0F3F	2 Watts

Equipment and Antenna Parameters

Purpose	Manufacturer	Model	Antenna Type	Antenna Gain	Antenna Polarization
Command & Control	Freewave	FGRM-501X005	Monopole	0	Vertical
Video	Global Microwave Systems Inc./ Cobham	NT Series	Monopole	0	Vertical