

1. Introduction

By the instant application, BAE Systems Unmanned Aircraft Programs Inc. (“BAE Systems”) requests that the Commission grant to BAE Systems a 2 year experimental license to operate the facilities (the “Facilities”) specified in the instant application. As discussed with the Commission, the requested are intended to be operated in conjunction with the facilities previously granted by the FCC under File No. 0487-EX-PL-2009.

2. Purpose and Nature of the Operation

BAE Systems manufactures and tests antennas as well as RF systems for DOD as well as other governmental customers. This unit’s lines of business generally include development and production of small unmanned aircraft and associated ground control station equipment in support of military operations and homeland defense. The testing to be conducted pursuant to this application involves the continued development verification and production acceptance of radio link equipment used in the unmanned aircraft systems employed in direct support of military branches for C4ISR applications. More specifically, the transmissions to be conducted under this requested license will involve the testing of a wireless modem at BAE Systems' factory in Tucson, Arizona. The wireless modem is made by Microhard Systems Inc. and it is the MHX320.

3. Transmitting Equipment

Manufacturer	Model	Quantity	Experimental?
Microhard	MHX320	5	NO

4. Explanation of Very Discrete and Limited Frequency Requirement for this License

The MHX320 wireless modem involved in this experiment is tunable and can be adjusted to operate anywhere in the frequency range from 310-390 MHz. This is to confirm, however, that BAE Systems does not specifically need to operate throughout both 310-328.6 MHz and 335.4-390 MHz. Rather, BAE Systems requires only a *very discrete grant on a very limited bandwidth* in either of those bands in order to accommodate its needs for this experiment. *Specifically, BAE Systems' minimum frequency requirements within either 310-328.6 MHz or 335.4-390 MHz are as follows:*

- *A single 280 kHz block, comprised of a center frequency plus 140 kHz below and above the center frequency*, to allow for a 20 decibel drop in the radio signal from the center frequency to ensure non-interference.
- Emission designator = 280KF1D
- Output Power and ERP = 1W
- Modulating Signal = FM and CPFSK

Accordingly, BAE Systems respectfully requests that the Commission, in consultation with NTIA, grant this application so that BAE Systems’ minimum frequency requirements are met.

5. Contracts

The following contracts apply to the request for a discrete frequency grant between 310-390 MHz:

Contract Number: N68335-08-C-0474:

CONTRACTING POC:

Karen Sacco

karen.sacco@navy.mil

TECHNICAL POC is:

Chyau Shen

Phone: (301)342-0093

Email: chyau.shen@navy.mil

Contract Number: W15P7T-09-C-S007:

CONTRACTING POC:

Giorgio Bertoli

(732) 427-5760

Giorgio.Bertoli@us.army.mil

TECHNICAL POC is:

Bing Mak

Phone: (732) 532-1407 DSN 992

Lakehurst, (732) 323-4021/7487

bing.mak@us.army.mil

Contract Number: FA8650-09-C-7939:

CONTRACTING POC:

Melinda K. Voiles

melinda.voiles@wpafb.af.mil

TECHNICAL POC is:

Vince Parisi

vincent.parisi@wpafb.af.mil

937-853-3031 (O)

937-829-4600 (C)

937-904-9846 (O)

Contract Number: FA8650-10-C-7037:

CONTRACTING POC:

Melinda K. Voiles

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TECHNICAL POC:

Vince Parisi

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937-853-3031 (O)

937-829-4600 (C)

937-904-9846 (O)

6. Mitigation of Interference/Stop Buzzer.

A. Mitigation of Interference

BAE Systems requires approximately 140 kHz above and below a central frequency in either of the requested bands to obtain a 20 dB reduction in the radio signal to ensure non-interference with adjacent users. As a long-time Commission licensee, BAE Systems is extremely vigilant in ensuring that its operations do not cause interference. BAE Systems requests that it be able to ensure non-interference by retaining its request for a 280 kHz bandwidth, which is the bandwidth specified on the DD1494 for the MHX320 modem.

Authority is requested for only limited and sporadic operation of the facilities during the authorized timeframe. Specifically, operation of the facilities will occur only from 7:00 am – 5:00 pm local time. The majority of operations of the facilities will be conducted inside the laboratory. In addition, during those hours, operation will be sporadic, not continuous. In fact, there may be extended periods of non-operation during the authorized period, while other non-RF transmission aspects of the experiment are conducted.

BAE Systems understands that FAA (or other stakeholders) may require certain limited azimuth and/or elevation blanking in order to ensure that the proposed facilities do not pose a threat of interference to adjacent emitters. Accordingly, this is to confirm that the subject system does have such blanking capabilities and that BAE Systems stands ready to work with FAA to identify any reasonably necessary azimuth and/or elevation restrictions for the system.

B. Stop Buzzer

BAE Systems advises that Christopher Troudt will be available by wireless telephone at 520-240-2974 and will act as a “stop buzzer” if any issues regarding interference arise during testing.

For the foregoing reasons, BAE Systems respectfully submits that approval of this application is in the public interest, convenience and necessity.