

1. Introduction

By the instant application (“Application”), BAE Systems Information and Electronic Systems Integration Inc. (“BAE Systems”) requests that the Commission grant a 2 year experimental license to permit BAE Systems to operate the facilities (the “Facilities”) specified in the instant application.

2. Purpose of the Operation

The testing at the Merrimack Antenna Test Facilities is a critical part of the manufacture and delivery of military systems provided to the Armed Forces in support of Homeland Security as well as war efforts. At this time, there is currently no government contract information specifically associated with the requested frequency application. If and when the facilities are to be used to implement the requirements of a specific government contract, BAE Systems will notify the Commission, or seek any necessary approvals, at such time.

3. Other Issues**a. Antenna Data**

The following is provided with respect to the experimental antennas to be used in this experiment.

i. Directional Antennas

Certain antennas to be used in connection with this experiment are directional in nature. Directional antennas will be mounted on a tripod 1 meter above the ground and transmit along a 215 deg line of bearing towards a fixed target located 1 meter above the ground. For the convenience of the Commission, the chart below defines certain specifications relating to the directional antennas that are intended to be used in the requested experiment:

Mfg.	Model Number	Frequency Range	Gain	BW		
Sunol Sciences	JB-1	30 – 2000 MHz	<0 dBi below 100 MHz, <5 dBi below 200 MHz, 7 dBi max 200 – 2000 MHz	<u>Freq</u>	<u>E-</u>	<u>H-</u>
				<u>MHz</u>	<u>Plane</u>	<u>Plane</u>
				30	90deg	Omni
				200	60deg	100deg
				1000	50deg	100deg
Emco	3106	100 – 2000 MHz	13 dBi max across band	2000	50deg	100deg
				<u>Freq</u>	<u>E-</u>	<u>H-</u>
				<u>MHz</u>	<u>Plane</u>	<u>Plane</u>
				200	90deg	80deg
				1000	65deg	40deg
				2000	55deg	40deg

ii. Non-Directional (OMNI) Antennas

Certain antennas to be used in connection with this experiment are non-directional in nature. For the convenience of the Commission, the chart below defines certain specifications relating to the non-directional antennas that are intended to be used in the requested experiment:

Mfg.	Model Number	Frequency Range	Gain	BW
Shakespeare	Style 120	0.850 – 30 MHz	0 dBi	Omni
RF Harris	RF-1930CHD	1.6 – 30 MHz	0 dBi	Omni
BAE Systems	Experimental	> 2000 MHz	0 dBi	Omni

The non-directional Shakespeare Style 120 monopole is 35 feet (10.7 meters) tall.

b. Additional Signal Amplification

Due to the low gain of the transmit antennas, an additional signal amplification is to be utilized.

Mfg.	Model Number	Frequency Range	Gain (Nom.)
HP	8347A	100 kHz – 3 GHz	20 dB

c. RF Source

Agilent N5230A PNA-L Network Analyzer 300 KHz to 13.5 GHz.

d. Prevention of Interference

BAE Systems hereby advises the Commission that the tests to be conducted under the requested Commission authorization are to be conducted near the center of BAE Systems' Merrimack, New Hampshire facilities. Such location will result in the separation of the test facilities from other existing transmit or receive facilities.

e. Stop Buzzer

BAE Systems' George Moynihan will be conducting the test and will be available by telephone at (603) 885-3173. Mr. Moynihan will act as a "stop buzzer" if any issues regarding interference arise during testing.