

The Boeing Company

Request for Experimental License Exhibit

BAE Systems RT-1763C/APX-111(V) Interrogator-Transponder Set Part Number 1007101G-30
Cobham AvComm IFF-45TS-110 MK XIIA/TACAN Bench Test Set
Independent Research and Development

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by

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Why an OET Experimental License is necessary

The Boeing Company requests an experimental license in order to operate the subject Interrogator-Transponder Sets. This experimental license will allow antenna testing for a newly developed Kuwait F/A-18E/F Conformal Antenna Subsystem (CAS) that will potentially be implemented into future Federal Government radio frequency systems. If a government contract is granted in the future, Boeing will procure the appropriate Federal Government frequency assignments. This experimental license will allow antenna testing since no current Government contract exists.

Purpose of Operation

The purpose of the test is to measure the performance a newly developed Kuwait F/A-18E/F Conformal Antenna Subsystem (CAS).

Test Description

The IFF-45TS MK XXIA/TACAN Bench test will be operated in Boeing building 73-95 in Portage Des Sioux, Missouri. The RT-1763C/APX-111(V) Interrogator-Transponder Set will be mounted on a 50 foot tower North of building 73-95 at a distance of approximately 1,000 feet. The RT-1763C/APX-111(V) will transmit/interrogate on 1030 MHz. The IFF-45TS MK XIIA/TACAN bench test will transmit/respond on 1090 MHz. During the test, only SIF mode 3/A will be used with a 1% duty cycle. The purpose of the transmissions are to measure the performance of the Conformal Antenna Subsystem and gather data.

Timely Response Appreciated

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

Locations (with a ½ kilometer radius)

The Boeing Company
Bldg. 73-95
6100 Portage Rd
Portage Des Sioux (St Charles County), MO 63373-1101
38° 55' 36"N
90° 25' 24"W
WGS84/NAD83

North Tower
6100 Portage Rd
Portage Des Sioux (St Charles County), MO 63373-1101
38° 55' 46"N
90° 25' 24"W
WGS84/NAD83



Figure 1 – Boeing, Portage Des Sioux, MO (Building 73-95 and North Tower)

Schedule

The requested experimental 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 0.5 kilometer radius of given locations. Boeing requests license be issued for November 1, 2017 – November 1, 2019 timeframe to permit intermittent testing.

Note: This requirement has been coordinated in the Federal Aviation Administration's (FAA) Frequency Coordination Request (FCR) Internet Portal. FAA tracking numbers TRK 170710 (NG T170287) and TRK 170712 (NG T170288) refer and are attached separately to this application.

Stop Buzzer Contact Information

The equipment will be operated by Boeing employees.

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Frequencies, Power and Emission

RF System	Frequency	Power	Emission
RT-1763C/APX-111(V)	1030 MHz	10 watts (peak) – with antenna gain and inline attenuators factored in.	9M00V1D
IFF-45TS	1090 MHz	1 watt (peak) – without antenna gain factored in. 40 watts with antenna gain factored in.	8M47M1D

Equipment and Antenna Parameters

On North Tower

Transmitter Manufacturer	BAE Systems
Transmitter Part Number	1007101G-30
Frequency Band	1030 MHz (Fixed)
Emission	9M00V1D
Antenna Manufacturer	BAE Systems Greenlawn NY
Antenna Model Number	BAE Part Numbers 8532350-1 (Antenna Array) and 8532222-1 (Beam Forming Network)
Antenna Type	Directional Log Periodic Antenna Array and separate Beam Forming Network
Antenna Gain	Classified
Antenna Beamwidth	80 degrees elevation, steerable beams covering ± 60 degrees azimuth
Antenna Polarization	Vertical

At Boeing building 73-95

Transmitter Manufacturer	Cobham AvComm
Transmitter Part Number	72438

Frequency Band	955-1223 MHz
Emission	8M47M1D
Antenna Manufacturer	Scientific Atlanta
Antenna Model Number	12-0.75
Antenna Type	Horn
Antenna Gain	16.9 dB
Antenna Beamwidth	23 degrees horizontal and 23 degrees vertical
Antenna Polarization	Linear