

**United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
RADIO STATION CONSTRUCTION PERMIT
AND LICENSE**

EXPERIMENTAL

(Nature of Service)

XD FX MO

(Class of Station)

WJ2XZN

(Call Sign)

0091-EX-CN-2019

(File Number)

NAME The Boeing Company

Subject to the provisions of the Communications Act of 1934, subsequent acts, and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions and requirements set forth in this license, the licensee hereof is hereby authorized to use and operate the radio transmitting facilities hereinafter described for radio communications in accordance with the program of experimentation described by the licensee in its application for license.

Operation: In accordance with Sec. 5.3(g) of the Commission's Rules

Station Locations

- (1) SEATTLE (KING), WA - NL 47-31-50; WL 122-18-40
- (2) MOBILE: Seattle, WA, within 804 km, centered around NL 47-31-50; WL 122-18-40

Frequency Information

SEATTLE (KING), WA - NL 47-31-50; WL 122-18-40

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1626.5-1660.5 MHz	FX	200KG7W	950 W (ERP)	
		200KD7W		
		40K0D1W		
		8K40G1D		
		1K68G1D		
		10K5G1D		
		21K0G1D		
		840HG1D		
		25K0G1W		
		25K0G7W		
		50K0G1W		
		50K0G7W		
		50K0D1W		
		50K0D7W		

This authorization effective March 11, 2019 and
will expire 3:00 A.M. EST March 01, 2021

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

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1626.5-1660.5 MHz	FX	100KG1W	950 W (ERP)	
		100KG7W		
		100KD1W		
		100KD7W		
		200KG1W		
		200KD1W		
		110KD7W		
1668.4-1675 MHz	FX	100KD7W	950 W (ERP)	
		200KG1W		
		200KD1W		
		110KD7W		
		200KG7W		
		200KD7W		
		40K0D1W		
		8K40G1D		
		1K68G1D		
		10K5G1D		
		21K0G1D		
		840HG1D		
		25K0G1W		
		25K0G7W		
		50K0G1W		
		50K0G7W		
		50K0D1W		
		50K0D7W		
		100KG1W		
		100KG7W		
		100KD1W		

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1626.5-1660.5 MHz	MO		950 W (ERP)	
		200KG7W		
		200KD7W		
		40K0D1W		
		8K40G1D		
		1K68G1D		
		10K5G1D		
		21K0G1D		
		840HG1D		
		200KG1W		
		200KD1W		
		25K0G1W		
		25K0G7W		
		50K0G1W		
		50K0G7W		
		50K0D1W		
		50K0D7W		
		100KG1W		
		100KG7W		
		100KD1W		
		100KD7W		
		110KD7W		
1668.4-1675 MHz	MO		950 W (ERP)	
		200KG7W		
		200KD7W		
		40K0D1W		
		8K40G1D		
		1K68G1D		
		10K5G1D		
		21K0G1D		
		840HG1D		
		200KG1W		
		200KD1W		
		25K0G1W		
		25K0G7W		

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MOBILE: Seattle, WA, within 804 km, centered around NL 47-31-50; WL 122-18-40

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1668.4-1675 MHz	MO	50K0G1W	950 W (ERP)	
		50K0G7W		
		50K0D1W		
		50K0D7W		
		100KG1W		
		100KG7W		
		100KD1W		
		100KD7W		
		110KD7W		

Special Conditions:

- (1) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (2) Licensee should be aware that other stations may be licensed on these frequencies and if any interference occurs, the licensee of this authorization will be subject to immediate shut down.
- (3) Operations in the 1626.5-1660.5 MHz frequency band for communications between the station onboard aircraft and INMARSAT space stations must comply with the terms of any L-band operator-to-operator coordination agreement.
- (4) For operations in the 1626.5-1660.5 MHz frequency band, this authorization is subject to compliance with the provisions of the Agreement between Inmarsat on the one hand and the U.S. Department of Justice (DOJ) and the Department of Homeland Security (DHS) on the other, dated September 23, 2008.
- (5) Stop Buzzer: Nicolae Samson at 425-234-4056/ (Cell) 206-419-4577
- (6) The aircraft earth stations (ESAAs) are authorized, on a non-protected and non-harmful interference basis, to transmit to the geostationary-orbit space stations using the 1626.5-1660.5 MHz frequency band that are authorized by the Commissions. The aircraft earth stations authorized herein must immediately terminate operations upon notification that such operation is causing harmful interference to any other radio system lawfully operating in the 1626.5-1660.5 MHz frequency band. The aircraft earth stations authorized herein cannot claim protection from harmful interference from any radio system lawfully operating in the 1626.5-1660.5 MHz frequency band.
- (7) Licensee's ESAAs must employ a tracking algorithm that is resistant to capturing and tracking adjacent satellite signals, and each station must be capable of inhibiting its own transmission in the event it detects unintended satellite tracking.

Special Conditions:

- (8) Licensee's ESAs must be monitored and controlled by a ground-based network control and monitoring center. Such stations must be able to receive "enable transmission" and "disable transmission" commands from the network control center and must cease transmission immediately after receiving a "parameter change" command until receiving an "enable transmission" command from the network control center. The network control center must monitor operation of each earth station to determine if it is malfunctioning, and each earth station must self-monitor and automatically cease transmission on detecting an operational fault that could cause harmful interference to a fixed satellite service network.
- (9) Licensee must maintain a point of contact available 24 hours per day, seven days per week, with the authority and ability to terminate operations authorized herein, for discussing interference concerns with other licensees, and must submit a letter to be included in its license file with the name and telephone number of the point of contact prior to commencing operation.
- (10) ESAs authorized herein must not be used for air traffic control communications.
- (11) Aircraft operations are limited to U.S.-registered aircraft.
- (12) The authorized station must be in compliance with the Federal Aviation Administration (FAA) requirements as set forth in Section 17.4 of the Commission's Rules.
- (13) The authorized station must be in compliance with environmental requirement set forth in Section 1.1307 of the Commission's Rules.
- (14) This authorization is without prejudice to any determination that the Commission may make regarding pending or future experimental satellite earth station applications.
- (15) Operations are on a non-interference basis (NIB) and shall not cause harmful interference to, and shall not claim protection from, interference caused to it by any other lawfully operating station and it shall cease transmission(s) immediately upon notice of such interference and notify the FCC in writing.
- (16) The Boeing Company must coordinate with Dr. Glenn Langston at glangsto@nsf.gov or 703-292-4937 for any operations near radio telescopes or the National Radio Quiet Zone (NRQZ) in the 1660 - 1670 MHz band.
- (17) Experimental station shall use the minimum power level necessary to establish communications links to minimize potential interference to licensed users.
- (18) Point of Communication: INMARSAT geosynchronous L-band satellite(s) grant of US market access.
- (19) Operations of the authorized stations must be in compliance with the terms and conditions specified in the Inmarsat geosynchronous L-band satellite(s) grant of US market access, including any coordination agreements.
- (20) Operations in the 1626.5-1660.5 MHz frequency band are limited to communications between the station that has been approved by INMARSAT for operation on their satellite network and the INMARSAT space stations that has been granted for U.S. market access.