

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

EXPERIMENTAL

(Nature of Service)

XD FX

(Class of Station)

WD2XNX

(Call Sign)

0405-EX-CR-2021

(File Number)

NAME BOEING COMPANY, THE

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) Algona (KING), WA - NL 47-16-33; WL 122-14-23

Frequency Information

Algona (KING), WA - NL 47-16-33; WL 122-14-23

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
806-1164.45 MHz	FX	N0N	334 mW (ERP)	
1188.45-1215.59 MHz	FX	N0N	334 mW (ERP)	
1.298-1.507 GHz	FX	N0N	500 mW (ERP)	
1.625-1.661 GHz	FX	N0N	608 mW (ERP)	

This authorization effective October 01, 2021 and
will expire 3:00 A.M. EST October 01, 2023

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

Algona (KING), WA - NL 47-16-33; WL 122-14-23

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1.85-1.91 GHz	FX	N0N	804 mW (ERP)	
1.93-1.99 GHz	FX	N0N	873 mW (ERP)	
2.16-2.24 GHz	FX	N0N	1106 mW (ERP)	
2.246-2.255 GHz	FX	N0N	1120 mW (ERP)	
2.36-3.014 GHz	FX	N0N	2002 mW (ERP)	
3.24-3.36 GHz	FX	N0N	2488 mW (ERP)	
3.54-3.549 GHz	FX	N0N	3722 mW (ERP)	
4.29-4.48 GHz	FX	N0N	1966 mW (ERP)	
4.72-5.48 GHz	FX	N0N	2941 mW (ERP)	
6.58-6.7 GHz	FX	N0N	4396 mW (ERP)	

Frequency Information

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Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
7.238-7.37 GHz	FX	N0N	5319 mW (ERP)	
9.3-9.631 GHz	FX	N0N	3525 mW (ERP)	
9.834-9.856 GHz	FX	N0N	3692 mW (ERP)	
9.87-10.05 GHz	FX	N0N	3839 mW (ERP)	
10.55-10.57 GHz	FX	N0N	4246 mW (ERP)	
11.33-12.7 GHz	FX	N0N	6130 mW (ERP)	
13.16-13.43 GHz	FX	N0N	4416 mW (ERP)	
16.98-17.02 GHz	FX	N0N	7092 mW (ERP)	
17.88-18.27 GHz	FX	N0N	8172 mW (ERP)	
18.68-18.72 GHz	FX	N0N	8580 mW (ERP)	

Frequency Information

Algona (KING), WA - NL 47-16-33; WL 122-14-23

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
19.18-19.22 GHz	FX	N0N	9044 mW (ERP)	
19.67-19.71 GHz	FX	N0N	9511 mW (ERP)	
20.6-21.8 GHz	FX	N0N	11635 mW (ERP)	
22.66-23.98 GHz	FX	N0N	14079 mW (ERP)	
24.38-24.42 GHz	FX	N0N	14600 mW (ERP)	
25.47-25.53 GHz	FX	N0N	15958 mW (ERP)	
26.82-26.88 GHz	FX	N0N	10060 mW (ERP)	
28.77-28.83 GHz	FX	N0N	11572 mW (ERP)	
30.9-31.3 GHz	FX	N0N	15365 mW (ERP)	
31.8-33.22 GHz	FX	N0N	15365 mW (ERP)	

Frequency Information

Algona (KING), WA - NL 47-16-33; WL 122-14-23

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
33.96-34.04 GHz	FX	N0N	16133 mW (ERP)	
35.75-36.54 GHz	FX	N0N	18589 mW (ERP)	
36.57-36.63 GHz	FX	N0N	18681 mW (ERP)	
38.36-38.44 GHz	FX	N0N	20573 mW (ERP)	

Special Conditions:

- (1) Assignment in frequency band 960-1400, 2700-2900, or 9000-9200 MHz was coordinated prior to authorization with the FAA Northwest Coordinator, Seattle, WA. Use of frequencies under the authority of this assignment is subject to such further coordination with the FAA Northwest Coordinator, Seattle, WA, as necessary to ensure compatibility with existing uses.
- (2) This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to its authorization with AFMO CONUS, Ft. Sam Houston, TX, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with AFMO CONUS, Ft. Sam Houston, TX, as necessary to ensure compatibility with existing uses.
- (3) 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.
- (4) The station identification requirements of Section 5.115 of the Commission's Rules are waived.
- (5) Testing on 4290-4480 MHz shall not interfere with the operations of altimeters and avoid pointing antennas in the upwards direction.
- (6) Operation is NOT PERMITTED on the frequency bands 800-806 MHz, 1201.5-1202.5 MHz.
- (7) The designated point-of-contact to terminate the systems if interference occurs is Stephen Henning, 206-544-8386/206-949-4469 and Raymond Robinson 206-766-5484/425-283-8201.
- (8) Operation is subject to prior coordination with FAA Great Lakes regional Office, 2300 East Avenue, Des Plaines, Illinois 60018 PH 312-694-7071.

Special Conditions:

- (9) Operation is NOT PERMITTED using the following frequency bands:
- 976-980 MHz
 - 1000-1002 MHz
 - 1006-1008 MHz
 - 1014-1016 MHz
 - 1024-1036 MHz
 - 1084-1096 MHz
- (10) Prior to commencing any operations in the 2180-2190 MHz frequency band, experimental licensee must notify licensee of GAMMA ACQUISITION L.L.C. (Call sign E060430, POC/Satellite: S2633. Name: Ms. Allison Minea, Phone Number: 202-293-1216, E-Mail: alison.minea@dish.com). The notice must include the name and contact information of the stop buzzer personnel that will be available to cease operations in the event of reported interference. The notification should include the testing parameters (specific location(s), antenna gain(s), antenna height(s), antenna orientation, EIRP, EIRP density) and day and times of each test.
- (11) Prior to commencing any operations in the 2190-2200 MHz frequency band, experimental licensee must notify licensee of DBSD Services Limited. (Call sign E070272, POC/Satellite: S2651. Name: Ms. Allison Minea, Phone Number: 202-293-1216, E-Mail: alison.minea@dish.com). The notice must include the name and contact information of the stop buzzer personnel that will be available to cease operations in the event of reported interference. The notification should include the testing parameters (specific location(s), antenna gain(s), antenna height(s), antenna orientation, EIRP, EIRP density) and day and times of each test.
- (12) Prior to commencing any operations in the 2190-2200 MHz frequency band, experimental licensee must notify licensee of DBSD Services Limited. (Call sign E070272, POC/Satellite: S2651. Name: Ms. Allison Minea, Phone Number: 202-293-1216, E-Mail: alison.minea@dish.com). The notice must include the name and contact information of the stop buzzer personnel that will be available to cease operations in the event of reported interference. The notification should include the testing parameters (specific location(s), antenna gain(s), antenna height(s), antenna orientation, EIRP, EIRP density) and day and times of each test.

Special Conditions:

- (13) Prior to commencing any operations in the 3.7-4.2 GHz frequency band, experimental licensee must notify licensees of earth stations. The notice must include the name and contact information of the stop buzzer personnel that will be available to cease operations in the event of reported interference. The notification should include the testing parameters (specific location(s), antenna gain(s), antenna height(s), antenna orientation, EIRP, EIRP density) and day and times of each test. Please notify the following licensees:

Call Sign: E182042A

Frequency bands: 3.7-4.2 GHz

Licensee: Comcast Cable Communications Management, LLC

ATTN: Matthew Johnson

Phone: 302-220-8735 Fax: E-Mail: Matthew_Johnson4@comcast.com

Site Contact: Matthew Johnson 302 220-8735

Call Sign: E181616A

Frequency bands: 4.0-4.2 GHz

Licensee: King Broadcasting Company

ATTN: Denise A Branson

Phone: 703-873-6606 Fax: E-Mail: dbranson@tegn.com

Site Contact: Richard Trumbo 206-448-3831

Call Sign: E990286

Frequency bands: 3.7-4.2 GHz

Licensee: Sinclair Television Media, Inc.

ATTN: John Barrett

Phone: 206-404-7000 Fax: 206-404-6014

Site Contact: JACK D. BARNES 206-404-4322

Call Sign: E970452

Frequency bands: 3.7-4.2 GHz

Licensee:

iHM Licenses, LLC

Phone: 918-664-4581 Fax: 918-664-3066 E-Mail: FCCcontact@iheartmedia.com

Site Contact: JOHN MILLER 206-494-2999

Call Sign: E960569, E980042

Frequency bands: 3.7-4.2 GHz

Licensee: Associated Press

ATTN: OLETA J. BROWN

Phone: 816-654-1000 Fax: 816-654-1035 E-Mail: ojbrown@ap.org

Call Sign: E000140

Frequency bands: 3.7-4.2 GHz

Licensee: The University of Washington

ATTN: Mr Terry Denbrook

Phone: 206-543-2710 Fax: 206-543-2720 E-Mail: tdenbrook@u.washington.edu

Site Contact: TERRY DENBROOK 206-685-1137

Special Conditions:

- (14) Prior to commencing any operations in the 11.7-12.2 GHz frequency band, experimental licensee must notify licensees of earth stations. The notice must include the name and contact information of the stop buzzer personnel that will be available to cease operations in the event of reported interference. The notification should include the testing parameters (specific location(s), antenna gain(s), antenna height(s), antenna orientation, EIRP, EIRP density) and day and times of each test. Please notify the following licensees:

Call Sign: E182042A

Frequency bands: 11.7-12.2 GHz

Licensee: Comcast Cable Communications Management, LLC

ATTN: Matthew Johnson

Phone: 302-220-8735 Fax: E-Mail: Matthew_Johnson4@comcast.com

Site Contact: Matthew Johnson 302 220-8735

Call Sign: E7699

Frequency bands: 11.7-12.2 GHz

Licensee: NBC Telemundo License LLC

ATTN: Margaret L Tobey

Phone: 202-524-6401 Fax: 202-524-6411 E-Mail: margaret.tobey@nbcuni.com

Site Contact: 206-448-3939

Call Sign: E980126

Frequency bands: 11.7-12.2 GHz

Licensee:

UNIVERSITY OF WASHINGTON

ATTN: Mr Michael C Wellings

Phone: 206-543-9922 Fax: 206-616-0432 E-Mail: wellings@u.washington.edu

Call Sign: E110096

Frequency bands: 11.7-12.2 GHz

Licensee: SINCLAIR SEATTLE LICENSEE, LLC

ATTN: Clifford M Harrington Esq.

Phone: 202-663-8525 Fax: E-Mail: clifford.harrington@pillsburylaw.com

Site Contact: LEE WOOD 206-404-8144

Call Sign: E050057

Frequency bands: 11.7-12.2 GHz

Licensee: Fox Television Stations, LLC

ATTN: Joseph Di Scipio

Phone: 202-824-6522 Fax: 202-824-6510 E-Mail: joe.discipio@fox.com

Site Contact: Chief Engineer 206-674-1300

Call Sign: E090192

Frequency bands: 11.7-12.2 GHz

Licensee: UNIVERSITY OF WASHINGTON

ATTN: MR. JAMES ALLS

Phone: 206-616-4223 Fax: 206-616-0432 E-Mail: jalls@u.washington.edu

Call Sign: E070166

Frequency bands: 11.7-12.2 GHz

Licensee: Mars Hill Fellowship

Special Agent: ATTN: JERRY WALKER

Phone: 949-348-8510 x Fax: 949-348-8514 E-Mail:
jerry@businessradiolicensing.com
Site Contact: JUSTIN EBY 206-706-6641

Mobile Earth station (MES/MSS) Call Sign: E060390
Frequency bands: 11.7-12.2 GHz
Licensee: L-3 Communications Corporation Linkabit Division
Phone Number: 858-552-9944
E-Mail: Mark.Monte@L-3com.com
Name: Mark S. Lawless Phone Number: 801-594-2808
Company: L3 Technologies, Inc.
E-Mail: mark.s.lawless@L3T.com

MES/MSS Call Sign: E060449, E060450, E060451, E060101, E060447, E060448
Frequency bands: 11.7-12.2 GHz
Licensee: Gilat North America, L.L.C. Phone Number: 703-848-1000
E-Mail: lesley.cooper@spacenet.com
Attention: Lesley Cooper

MES/MSS Call Sign: E960474
Frequency bands: 11.7-12.2 GHz
Licensee: Omnitrac, LLC. Phone Number: 469-801-6180
Fax Number: 469-801-6431
E-Mail: darnold@omnitrac.com
Attention: David Arnold
Name: Paul C. Besozzi Phone Number: 202-457-5292
Company: Squire Patton Boggs (US) LLP Fax Number: 202-457-6315
E-Mail: paul.besozzi@squirepb.com

MES/MSS Call Sign: E880423, E040139
Frequency bands: 11.7-12.2 GHz
Licensee: Omnitrac, Inc. Phone Number: 858-651-8838
Fax Number: 858-658-1576
E-Mail: ruelv@omnitrac.com
Attention: Mr. Ruel Valenzuela
Name: Daniel H. Kahn Phone Number: 202-662-5539
Company: Covington & Burling LLP Fax Number: 202-778-5539
E-Mail: dkahn@cov.com

VMES Call Sign: E960413
Frequency bands: 11.7-12.2 GHz
Licensee: ThinKom Solutions Inc. Phone Number: 310-896-3903
Fax Number: 310-214-1066
E-Mail: JorgeR@thin-kom.com
Attention: Mr. Jorge S Raphael

VMES Call Sign: E960413, E170191
Frequency bands: 11.7-12.2 GHz

Speci

Licensee: NBC Telemundo License LLC

ATTN: Margaret L Tobey

Phone: 202-524-6401 Fax: 202-524-6411 E-Mail: margaret.tobey@nbcuni.com

Site Contact: MICHELE TULLY 321-723-5395

NGSO BES (Blanket earth station) Call Sign: E190555

Frequency band(s): 11700-12200 MHz

Licensee: Kepler Communications Inc.

Phone Number: 437-537-5371

E-Mail: nspina@keplercommunications.

Attention: Mr Nickolas G Spina

Receive-Only Blanket Earth Station Call Sign: E040344

Direct to Home Fixed Satellite

Frequency band(s): 11700-12200 MHz

Licensee: DISH Operating L.L.C.

Name: EchoStar Satellite L.L.C.

Phone Number: 303-723-1000

Attention: David K Moskowitz

Name: Pantelis Michalopoulos

Phone Number: 202-429-6494

Company: Steptoe & Johnson LLP

E-Mail: pmichalo@steptoe.com

Attention: Relationship: Legal Counsel

VMES Call Sign: E170121

Frequency bands: 10950- 11200 MHz, 11450- 11950 MHz, 11700- 12200 MHz

Licensee: Intelsat License LLC Phone Number: 703-559-7848

Fax Number: 703-559-8539

E-Mail: Cynthia.Grady@intelsat.com

Attention: Cynthia Grady

Name: Richard Cameron Phone Number: 202-230-4962

Company: LMI Advisors

E-Mail: rcameron@lmiadvisors.com

VMES Call Sign: E140087

Frequency bands: 10700- 12750 MHz

Licensee: Astronics AeroSat Corporation Phone Number: 603-879-0205

E-Mail: jonathan.epstein@astronics.com

Attention: Mr. Jonathan Epstein

Name: Carlos Nalda Phone Number: 5713325626

Company: LMI Advisors

E-Mail: cnalda@lmiadvisors.com

VMES Call Sign: E170070

Frequency bands: 10950- 11200 MHz, 11450- 12200 MHz

Licensee: Kymeta Corporation Phone Number: 425-896-3700

E-Mail: ryans@kymetacorp.com

Attention: Mr Ryan Stevenson

Specie: Attention: Mr. Ryan Stevenson

Name: Robert Koppel Phone Number: 703-584-8669
Company: Lukas, LaFuria, Gutierrez & Sachs, LLP
E-Mail: bkoppel@fcclaw.com

VMES Call Sign: E100099
Frequency bands: 11.7-12.2 GHz
Licensee: L3harris Technologies Phone Number: 805-584-1717 x3179
E-Mail: peter.richardson@l3harris.com
Attention: Mr. Peter A Richardson

VMES Call Sign: E110078
Frequency bands: 10950- 11200 MHz, 11450- 11950 MHz, 11700- 12200 MHz
Licensee: KVH Industries, Inc. Phone Number: 401-845-8148
Fax Number: 401-845-8116
E-Mail: ffeingold@kvh.com
Attention: Ms. Felise Feingold
Name: Carlos Nalda Phone Number: 571-332-5626
Company: LMI Advisors
E-Mail: cnalda@lmiadvisors.com
Attention: Mr. Carlos Nalda

NGSO BES (Blanket earth station) Call Sign: E190066

Frequency bands: 10700- 12700 MHz
Licensee: SpaceX Services, Inc. Phone Number: 202-649-2700
E-Mail: David.Goldman@spacex.com
Attention: David Goldman

- (15) Prior to commencing any in the 12.2 -12.7 GHz band, experimental licensee must notify licensees of Dish Network (Mr. Mariam Sorond, Email: Mariam.sorond@dish.com Charles Ergen, Email: charlie.ergen@dish.com) EchoStar (Mr. Jaime Londono Email: Jaime.londono@echostar.com), and DirecTV/AT&T (Mr. Raquel Noriega Email: raquel.noriega@att.com). The notice must include the name and contact information of the stop buzzer personnel that will be available to cease operations in the event of reported interference. The notification should include the testing parameters (specific location(s), antenna gain(s), antenna pattern, antenna height(s), antenna orientation, eirp density) and day and times of each test.
- (16) Prior to commencing any in the 12.2 -12.7 GHz band, experimental licensee must notify licensees of DISH Operating L.L.C. (Blanket Earth Stations call sign: E090020), DISH Broadcasting Corporation (Blanket Earth Stations call sign: E080107) and EchoStar 77 Corp. (Blanket Earth Stations call sign: E050196). Phone Number: 202-463-3709 or 202-293-0981, E-Mail: Alison.Minea@dish.com Attention: Alison Minea). The notice must include the name and contact information of the stop buzzer personnel that will be available to cease operations in the event of reported interference. The notification should include the testing parameters (specific location(s), antenna gain(s), antenna pattern, antenna height(s), antenna orientation, EIRP, EIRP density) and day and times of each test.

Special Conditions:

- (17) Prior to commencing any operations in the 17.88-18.27 GHz, 18.68-18.72 GHz, 19.18-19.22 GHz, 19.7-19.71 GHz frequency bands, experimental licensee must notify licensees of earth stations. The notice must include the name and contact information of the stop buzzer personnel that will be available to cease operations in the event of reported interference. The notification should include the testing parameters (specific location(s), antenna gain(s), antenna height(s), antenna orientation, EIRP, EIRP density) and day and times of each test. Please notify the following licensees:

Call Sign: E150081

Frequency bands: 18.300 -19.300 GHz, 19.7-20.2 GHz, 27.85-29.1 GHz, 29.25-30 GHz

Call Sign: E060445

Frequency bands: 18.300 -19.300 GHz, 19.7-20.2 GHz, 29.25-30 GHz

Call Sign: E150081

Frequency bands: 18.300 -19.300 GHz, 19.7-20.2 GHz, 27.85-29.1 GHz, 29.25-30 GHz

Licensee: HNS License Sub, LLC

ATTN: Jennifer Manner

Phone: 301-428-5893 Fax: 301-428-2818 E-Mail: jennifer.manner@echostar.com

Site Contact: Network Management Ctr 3014287205

NGSO Call Sign: E140101

Frequency bands: 18.8 -19.3 GHz, 28.6-29.1 GHz

Licensee: SES S.A. Phone Number: 202-478-7143

Fax Number: 202-478-7101

E-Mail: petra.vorwig@ses.com

Attention: Ms. Petra Vorwig

NGSO Call Sign: E190676

Frequency bands: 28350-29100 MHz, 17800-18600 MHz, 18800-19300 MHz

Licensee: SpaceX Services, Inc. Phone Number: 202-649-2700

Licensee: ATTN: Ms. Patricia Cooper

Phone: 202-649-2700 E-Mail: patricia.cooper@spacex.com Site contact: Ben

Stout 310 682 2553

Call Sign: E120227

Frequency bands: 18.3 -19.3 GHz, 19.7-20.2 GHz, 28.35-29.1 GHz, 29.5-30 GHz

Call Sign: E170088

Frequency bands: 17.7-18.3 GHz, 18.8 -19.3 GHz, 19.7-20.2 GHz, 28.35-29.1 GHz, 29.5-30 GHz

Call Sign: E190201

Frequency bands: 17.7-19.3 GHz, 19.7-20.2 GHz, 27.5-29.1 GHz, 29.5-30 GHz

Call Sign: E100143

Frequency bands: 18.3 -19.3 GHz, 19.7-20.2 GHz, 28.35-29.1 GHz, 29.5-30 GHz

Call Sign: E120026

Frequency bands: 18.3 -19.3 GHz, 19.7-20.2 GHz, 28.35-29.1 GHz, 29.5-30 GHz

Call Sign: E050033

Frequency bands: 19.7-20.2 GHz, 29.5-30 GHz

Licensee: ViaSat, Inc. Phone Number: 760-476-2583

Fax Number: 760-929-3941

E-Mail: daryl.hunter@viasat.com

Special Attention: Mr Daryl T Hunter

Call Sign: E140029

Frequency bands: 19.3-20.2 GHz, 29.1-30 GHz

Licensee: ISAT US Inc. Phone Number: 202-248-5150

E-Mail: brennan.price@inmarsat.com

Attention: Brennan Price

- (18) The applicant must obtain consents from the Advanced Wireless Service licensees in the proposed area prior to accessing to 2.16-2.24 GHz band.
- (19) The applicant must obtain consents from the Upper Microwave Flexible Use Service licensees in the proposed area prior to accessing to 24.38-24.42 GHz, 28.77-28.83 GHz, and 38.36-38.44 GHz bands.
- (20) The applicant must obtain consents from the Educational Broadband Service and Broadband Radio Service licensees in the proposed area prior to accessing to the frequency range from 2496 MHz to 2690 MHz
- (21) The applicant must coordinate with the local Society of Broadcast Engineers frequency coordinator prior to operation in the proposed frequency bands.
- (22) The applicant must coordinate with Fixed Microwave Service licensees in the proposed venue in accordance with 47 C.F.R, Part 101.103(d) prior to operation in the proposed frequency bands.
- (23) Operation is not permitted using the frequency band 3550-4200 MHz and 5030-5150 MHz.
- (24) Renewal of this license is subject to prior pre-coordination with AFTRCC and FAA.