

**United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
SPECIAL TEMPORARY AUTHORIZATION**

EXPERIMENTAL

(Nature of Service)

WS9XJV

(Call Sign)

XT FX MO

(Class of Station)

1006-EX-ST-2021

(File Number)

NAME Raytheon Company

This Special Temporary Authorization is granted upon the express condition that it may be terminated by the Commission at any time without advance notice or hearing if in its discretion the need for such action arises. Nothing contained herein shall be construed as a finding by the Commission that the authority herein granted is or will be in the public interest beyond the express terms hereof.

This Special Temporary Authorization shall not vest in the grantee any right to operate the station nor any right in the use of the frequencies designated in the authorization beyond the term hereof, nor in any other manner than authorized herein. Neither the authorization nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934. This authorization is subject to the right of use of control the Government of the United States conferred by Section 706 of the Communications Act of 1934.

Special Temporary Authority is hereby granted to operate the apparatus described below:

Purpose Of Operation:

The Purpose of the frequency authorization is for ground based testing of the X-Net Radio.

Station Locations

- (1) Fullerton (ORANGE), CA - NL 33-52-47; WL 117-57-18; MOBILE: , within 20 km, centered around NL 33-52-47; WL 117-57-18

Frequency Information

Fullerton (ORANGE), CA - NL 33-52-47; WL 117-57-18; MOBILE: , within 20 km, centered around NL 33-52-47; WL 117-57-18

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
420-449.75 MHz	FX	1M20G2D	2.33 W (ERP)	
420-449.75 MHz	MO	1M20G2D	2.33 W (ERP)	
420-449.75 MHz	FX	1M20G2D	13.74 W (ERP)	

This authorization effective September 10, 2021 and
will expire 3:00 A.M. EST October 01, 2021

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

Fullerton (ORANGE), CA - NL 33-52-47; WL 117-57-18; MOBILE: , within 20 km, centered around NL 33-52-47; WL 117-57-18

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
420-449.75 MHz	MO	1M20G2D	13.74 W (ERP)	
420-449.75 MHz	FX	1M20G2D	2.74 W (ERP)	
420-449.75 MHz	MO	1M20G2D	2.74 W (ERP)	
1370-1435 MHz	FX	1M20G2D	2.3 W (ERP)	
1370-1435 MHz	MO	1M20G2D	2.3 W (ERP)	
1370-1435 MHz	MO	1M20G2D	2.58 W (ERP)	
1370-1435 MHz	FX	1M20G2D	2.58 W (ERP)	
1370-1435 MHz	MO	1M20G2D	0.04 W (ERP)	
1370-1435 MHz	FX	1M20G2D	0.04 W (ERP)	
1525-1722 MHz	FX	1M20G2D	0.04 W (ERP)	

Frequency Information

Fullerton (ORANGE), CA - NL 33-52-47; WL 117-57-18; MOBILE: , within 20 km, centered around NL 33-52-47; WL 117-57-18

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1525-1722 MHz	MO	1M20G2D	0.04 W (ERP)	
1525-1722 MHz	FX	1M20G2D	2.58 W (ERP)	
1525-1722 MHz	MO	1M20G2D	2.3 W (ERP)	
1525-1722 MHz	FX	1M20G2D	2.3 W (ERP)	
1525-1722 MHz	MO	1M20G2D	2.58 W (ERP)	
1722-2310 MHz	MO	1M20G2D	2.3 W (ERP)	
1722-2310 MHz	MO	1M20G2D	2.58 W (ERP)	
1722-2310 MHz	FX	1M20G2D	0.02 W (ERP)	
1722-2310 MHz	MO	1M20G2D	0.02 W (ERP)	
1722-2310 MHz	FX	1M20G2D	2.3 W (ERP)	

Frequency Information

Fullerton (ORANGE), CA - NL 33-52-47; WL 117-57-18; MOBILE: , within 20 km, centered around NL 33-52-47; WL 117-57-18

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1722-2310 MHz	FX	1M20G2D	2.58 W (ERP)	
2395-2500 MHz	FX	1M20G2D	0.02 W (ERP)	
2395-2500 MHz	MO	1M20G2D	0.02 W (ERP)	
2395-2500 MHz	FX	1M20G2D	2.3 W (ERP)	
2395-2500 MHz	FX	1M20G2D	2.58 W (ERP)	
2395-2500 MHz	MO	1M20G2D	2.58 W (ERP)	
2395-2500 MHz	MO	1M20G2D	2.3 W (ERP)	

Special Conditions:

- (1) Operation in the 1695-1780 MHz, 1915-1920 MHz, 1995-2020 MHz or 2110-2200 MHz band requires consent of local Advanced Wireless Service (AWS) licensee(s) to avoid interference.
- (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) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.

Special Conditions:

- (4) Prior to commencing any operations in the frequencies below, the licensee must obtain consent from the following within 50 miles of the contours of the testing area:
 - 1390-92 MHz Band Licensees
 - 1392-1395 MHz/1432-1435 MHz Band licensees
 - 1670-1675 MHz Band licensee, and the lessee
 - Broadband PCS licensees (1850-1910 MHz/1930-1990 MHz)
 - 1910-1915 MHz/1990-1995 MHz Bands licensee
 - WCS (2305-2320 MHz/2345-2360 MHz) licensee (AT&T)
- (5) Operation is prohibited on any Public Safety frequency listed under Part 90 rules.
- (6) Obtain consents from the Broadband Radio Service licensees in the proposed area prior to accessing to the frequency range from 2496 MHz to 2500 MHz.
- (7) Coordinate with the local Society of Broadcast Engineers frequency coordinator prior to operation in the frequency from 2025 to 2110 MHz, and 2450 MHz to 2500 MHz.
- (8) 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 2450-2500 MHz band.
- (9) Operations in the 1544-1545/1645.5-1646.5 MHz frequency bands ARE LIMITED to distress and safety communications, in accordance with International Footnotes 5.356 and 5.375 of the ITU Radio Regulations.
- (10) Prior to commencing any operations in the 1559-1591 MHz and 1575.42 MHz frequency bands, experimental licensee must notify licensee of Spire Global, Inc. (POC/Satellite: S2946, S3045. Name: Michelle A. McClure Phone Number: 202-734-6883, E-Mail: michelle.mcclure@spire.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 1575.42 MHz frequency band, experimental licensee must notify licensee of BlackSky Global, LLC (POC/Satellite: S3032 Name: Ms Kristina Hloptsidis Phone Number: 206-399-2325, E-Mail: khloptsidis@SpaceflightIndustries). 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:

- (12) Operations with power levels at 2.3W or 2.58W are subject to the following:
Prior to commencing any operations in the 1525-1559 MHz (s-E) 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: E100192, E030055

Frequency bands: 1525- 1544 MHz, 1545- 1559 MHz

Licensee: ORBCOMM License Corp.

ATTN: Mr. Walter H. Sonnenfeldt,

Phone Number: 585-461-3018, E-Mail: sonnenfeldt.walter@orbcomm.com)

Call Sign: E090029

Frequency bands: 1530- 1544 MHz, 1545- 1559 MHz

Licensee: Name: COMTECH MOBILE DATACOM CORP.

Phone Number: 240-686-3300

Fax Number: 240-686-3301

E-Mail: John.Fossaceca@comtechmobile.com

Attention: John Fossaceca

Call Sign: E980203

Frequency bands: 1530 - 1559 MHz

Licensee: OuterLink Corporation

Attention: Paul F. Newcomb Phone Number: 877-688-3770 E-Mail:

sdurante@outerlink.com

Name: Bruce Olcott Phone Number: 202-626-6615 E-Mail: bruce.olcott@ssd.com

Company: Squire, Sanders & Dempsey (US) LLP Relationship: Legal Counsel

Call Sign: E050249, E010050, E010047, E010048, E010049, E000180

Frequency bands: 1525 - 1559 MHz

Licensee: Inmarsat Solutions (US) Inc.

Attention: M. Ethan Lucarelli

Phone Number: 202-572-0686

Fax Number: 202-248-5177

E-Mail: Ethan.Lucarelli@inmarsat.com

Name: Phillip R. Marchesiello Phone Number: 202-383-3343

Company: Wilkinson Barker Knauer, LLP Fax Number: 202-783-5851

Relationship: Legal Counsel

Call Sign: E090032

Frequency bands: 1525 - 1559 MHz

Licensee: ISAT US Inc. and Inmarsat Solutions (US) Inc.

Tel: (202) 696-1400

Fax: (202) 248-5177

Contact: M. Ethan Lucarelli

Email: Ethan.Lucarelli@inmarsat.com

Name: Timothy J. Cooney Phone Number: 2027834141 E-Mail: tcooney@wbklaw.co

Company: Wilkinson Barker Knauer, LLP Fax Number: 2027835851

Relationship: Legal Counsel

Special Call Sign: E980179

Frequency bands: 1525 - 1559 MHz

Licensee: Ligado Networks Subsidiary LLC

Name: LightSquared Subsidiary LLC,

Attention: Ms. Valerie Green Phone Number: 703-390-2004

E-Mail: Valerie@Ligado.com

Name: Gerard J. Waldron Phone Number: 202-662-5360

Company: Covington & Burling LLP Fax Number: 202-778-5360

E-Mail: gwaldron@cov.com

Relationship: Legal Counsel

Call Sign: E050276, E000284,

Frequency bands: 1525 - 1544 MHz

Licensee: Comsat, Inc.

Name: Airbus DS SatCom Government, Inc.

Attention: Michelle Wagner

Phone Number: +1.571.599.3632

E-Mail: MWagner@comsat.com

Attention: James G. Lovelace at

+1.571.599.3643 or jlovelace.ctr@comsat.com

Call Sign: E130033

Frequency bands: 1525- 1544 MHz, 1545- 1559 MHz

Licensee: ViaSat, Inc.

Attention: Attention: Mr Daryl T Hunter

Phone Number: 760-476-2583 E-Mail: daryl.hunter@viasat.com

Fax Number: 760-929-3941

Call Sign: E010011, E130083

Frequency band: 1545.9875 - 1545.9875 MHz

Licensee: Deere & Company

Attention: Mr. Mark Lewellen

Phone Number: 310-381-2000

Fax Number: 310-381-2001

E-Mail: lewellenmarkn@johndeere.com

Call Sign: E980159

Frequency bands: 1530 - 1559 MHz

Licensee: Satcom Systems, Incorporated

Attention: Mr Tom D Soumas Jr

Phone Number: 818-775-9740

Fax Number: 818-885-1882

Name: William K. Coulter Phone Number: 202-835-6136 E-Mail:

william.k.coulter@bakernet.com

Company: Baker & McKenzie LLP Fax Number: 202-416-7138

Relationship: Legal Counsel

Call Sign: E020074

Frequency bands: 1525- 1544 MHz

Licensee: Honeywell International Inc.

Attention: c/o Donna Balaguer

Company: Fish & Richardson P.C.

Phone Number: 2026267719

Special Fax Number: 2027832331

E-Mail: balaguer@fr.com

Relationship: Legal Counsel

Call Sign: E930367

Frequency bands: 1525 - 1559 MHz

Licensee: Ligado Networks Subsidiary LLC

Attention: Maqbool Aliani

Phone Number: 703-390-2797

Fax Number: 703-390-2778

Name: Elizabeth Park Phone Number: 202-637-1056 E-Mail: Elizabeth.Park@lw.com

Company: Latham & Watkins LLP

- (13) Prior to commencing any operations in the 2000-2010 MHz and 2180-2190 MHz frequency bands, 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.
- (14) Prior to commencing any operations in the 2010-2020 MHz and 2190-2200 MHz frequency bands, 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.
- (15) Prior to commencing any operations in the 1610-1618.725 MHz and 2483.5-2500 MHz frequency bands, experimental licensee must notify licensee of GUSA Licensee LLC. (Call sign E970381, S2115. Name: Mr. L. Barbee Ponder IV Phone Number: 985-335-1503 E-Mail: Barbee.Ponder@Globalstar.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:

- (16) Operations with power levels at 2.58W are subject to the following:
Prior to commencing any operations in the 1618.725 - 1626.5 MHz frequency band, experimental licensee must notify licensee of Iridium Satellite LLC (Call sign E960132 and E960622, POC/Satellite: S2110. Name: Ms Maureen C. McLaughlin, Phone Number: 703-287-7518, E-Mail: maureen.mclaughlin@iridium.co). 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.
- Prior to commencing any operations in the 1626.5 - 1645.5 MHz frequency band, experimental licensee must notify licensee of Honeywell International Inc. (Call sign E020074, POC/Satellite: All Inmarsat satellites on "ISAT List". Name: Donna Balaguer, Phone Number: 202-626-7719, E-Mail: balaguer@fr.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.
- (17) The 1390-1400 MHz and 1427-1432 MHz bands shall not be used for airborne operations in accordance with Footnote US79.
- (18) All operations in the 1370-1390 MHz band shall comply with the limits of unwanted emission recommendations specified in ITU Resolution 750 (Rev. WRC-19).
- (19) All operations in the 1435-1452 MHz band shall comply with the provisions of US338A.
- (20) All operations in the 1390-1395 MHz and 1427-1435 MHz bands shall comply with the provisions of Footnote NG338A.
- (21) 1. Raytheon Company must notch the following bands:
a. 1400 - 1427 MHz
b. 1550 - 1610 MHz
c. 1660.5 - 1668.4 MHz
- (22) Stop buzzer POC is Reuben Kirksey at (714) 446-2947, and (213) 393-1701.