

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

EXPERIMENTAL

(Nature of Service)

XT FX MO

(Class of Station)

WI2XTA

(Call Sign)

0153-EX-CM-2018

(File Number)

NAME Space Exploration Technologies Corp.

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(j) of the Commission's Rules

Station Locations

- (1) MOBILE: NGSO - Inclination 97.4deg, 514-1125 km circular
- (2) MOBILE: NGSO - Inclination 97.4deg, 514-1125 km circular
- (3) MOBILE: NGSO - Inclination 97.4deg, 514-1125 km circular
- (4) MOBILE: NGSO - Inclination 97.4deg, 514-1125 km circular
- (5) Redmond (KING), WA - NL 47-40-02; WL 122-05-40
- (6) Hawthorne (LOS ANGELES), CA - NL 33-55-15; WL 118-19-41
- (7) Fremont (ALAMEDA), CA - NL 37-29-36; WL 121-56-38
- (8) McGregor (MCLENNAN), TX - NL 31-24-30; WL 97-27-48
- (9) Brownsville (CAMERON), TX - NL 25-59-27; WL 97-10-56
- (10) Redmond (KING), WA - NL 47-40-02; WL 122-05-40
- (11) MOBILE: TV1 - USA: within 150 km of Locations 5-9
- (12) MOBILE: TV2 - USA: within 150 km of Locations 5-9
- (13) MOBILE: TV3 - USA: within 150 km of Locations 5-9
- (14) Brewster (OKANOGAN), WA - NL 48-08-50; WL 119-41-49
- (15) Redmond (KING), WA - NL 47-41-37; WL 122-01-59
- (16) Redmond (KING), WA - NL 47-40-02; WL 122-05-40
- (17) Redmond (KING), WA - NL 47-41-37; WL 122-01-59
- (18) MOBILE: Redmond, WA: Airborne max altitude 25,000 ft. AGL, within 150 km, centered around NL 47-41-37; WL 122-01-59

This authorization effective November 13, 2018 and
will expire 3:00 A.M. EST December 01, 2019

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

MOBILE: NGSO - Inclination 97.4deg, 514-1125 km circular

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
10700-12200 MHz	MO	240MD7W	2.8 W (Output Power)	0.001 %

MOBILE: NGSO - Inclination 97.4deg, 514-1125 km circular

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
8027.5-8087.5 MHz	MO	580KG1D	3.86 W (ERP)	0.001 %
8027.5-8087.5 MHz	MO	1M16G1D	7.72 W (ERP)	0.001 %
8027.5-8087.5 MHz	MO	11M6G1D 5M80G1D 2M90G1D	19.3 W (ERP)	0.001 %

MOBILE: NGSO - Inclination 97.4deg, 514-1125 km circular

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
12150-12250 MHz	MO	41M4D7W 1M35D7W 675KD7W 67K0D7W	3.5 W (Output Power)	2.0E-6 %

Frequency Information

MOBILE: NGSO - Inclination 97.4deg, 514-1125 km circular

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
18545-18605 MHz	MO	41M4D7W	6.72 W (ERP)	2.0E-6 %

Redmond (KING), WA - NL 47-40-02; WL 122-05-40

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2077.5-2105.5 MHz	FX	11M6G1D	122 kW (ERP)	4.0E-6 %

Hawthorne (LOS ANGELES), CA - NL 33-55-15; WL 118-19-41

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	FX	120MD7W	242.7 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	6.8 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	8.6 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	3.4 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	242.7 kW (ERP)	0.001 %

Frequency Information

Hawthorne (LOS ANGELES), CA - NL 33-55-15; WL 118-19-41

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
14000-14500 MHz	FX	240MD7W	6.8 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	8.6 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	3.4 kW (ERP)	0.001 %

Fremont (ALAMEDA), CA - NL 37-29-36; WL 121-56-38

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	FX	120MD7W	242.7 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	6.8 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	8.6 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	3.4 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	242.7 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	6.8 kW (ERP)	0.001 %

Frequency Information

Fremont (ALAMEDA), CA - NL 37-29-36; WL 121-56-38

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
14000-14500 MHz	FX	240MD7W	8.6 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	3.4 kW (ERP)	0.001 %

McGregor (MCLENNAN), TX - NL 31-24-30; WL 97-27-48

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	FX	120MD7W	242.7 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	6.8 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	8.6 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	3.4 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	242.7 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	6.8 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	8.6 kW (ERP)	0.001 %

Frequency Information

McGregor (MCLENNAN), TX - NL 31-24-30; WL 97-27-48

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
14000-14500 MHz	FX	240MD7W	3.4 kW (ERP)	0.001 %

Brownsville (CAMERON), TX - NL 25-59-27; WL 97-10-56

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	FX	120MD7W	242.7 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	6.8 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	8.6 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	3.4 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	242.7 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	6.8 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	8.6 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	3.4 kW (ERP)	0.001 %

Frequency Information

Redmond (KING), WA - NL 47-40-02; WL 122-05-40

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	FX	120MD7W	242.7 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	6.8 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	8.6 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	3.4 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	242.7 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	6.8 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	8.6 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	3.4 kW (ERP)	0.001 %

MOBILE: TV1 - USA: within 150 km of Locations 5-9

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	MO	120MD7W	242.7 kW (ERP)	0.001 %

Frequency Information

MOBILE: TV1 - USA: within 150 km of Locations 5-9

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	MO	120MD7W	6.8 kW (ERP)	0.001 %
13000-13250 MHz	MO	120MD7W	8.6 kW (ERP)	0.001 %
13000-13250 MHz	MO	120MD7W	3.4 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	242.7 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	6.8 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	8.6 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	3.4 kW (ERP)	0.001 %

MOBILE: TV2 - USA: within 150 km of Locations 5-9

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	MO	120MD7W	242.7 kW (ERP)	0.001 %
13000-13250 MHz	MO	120MD7W	6.8 kW (ERP)	0.001 %

Frequency Information

MOBILE: TV2 - USA: within 150 km of Locations 5-9

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	MO	120MD7W	8.6 kW (ERP)	0.001 %
13000-13250 MHz	MO	120MD7W	3.4 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	242.7 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	6.8 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	8.6 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	3.4 kW (ERP)	0.001 %

MOBILE: TV3 - USA: within 150 km of Locations 5-9

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	MO	120MD7W	242.7 kW (ERP)	0.001 %
13000-13250 MHz	MO	120MD7W	6.8 kW (ERP)	0.001 %
13000-13250 MHz	MO	120MD7W	8.6 kW (ERP)	0.001 %

Frequency Information

MOBILE: TV3 - USA: within 150 km of Locations 5-9

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	MO	120MD7W	3.4 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	242.7 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	6.8 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	8.6 kW (ERP)	0.001 %
14000-14500 MHz	MO	240MD7W	3.4 kW (ERP)	0.001 %

Brewster (OKANOGAN), WA - NL 48-08-50; WL 119-41-49

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	FX	120MD7W	9706 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	9706 kW (ERP)	0.001 %
13.85-14 GHz	FX	41M4D7W 13M5D7W 2M70D7W	9706 kW (ERP)	2.0E-6 %

Frequency Information

Redmond (KING), WA - NL 47-41-37; WL 122-01-59

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
14000-14500 MHz	FX	240MD7W	4.579 kW (ERP)	0.001 %

Redmond (KING), WA - NL 47-40-02; WL 122-05-40

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
13000-13250 MHz	FX	120MD7W	242.7 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	6.8 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	8.6 kW (ERP)	0.001 %
13000-13250 MHz	FX	120MD7W	3.4 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	242.7 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	6.8 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	8.6 kW (ERP)	0.001 %
14000-14500 MHz	FX	240MD7W	3.4 kW (ERP)	0.001 %

Frequency Information

Redmond (KING), WA - NL 47-41-37; WL 122-01-59

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
14000-14500 MHz	FX	240MD7W	123.03 kW (ERP)	0.001 %

MOBILE: Redmond, WA: Airborne max altitude 25,000 ft. AGL, within 150 km, centered around NL 47-41-37; WL 122-01-59

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
14000-14500 MHz	MO	240MD7W	4.579 kW (ERP)	0.001 %

Special Conditions:

- (1) Upon receipt of a conjunction warning from the JSpOC or other source, the licensee must review the warning and take all possible steps to assess and, if necessary, to mitigate collision risk, including, but not limited to: contacting the operator of any active spacecraft involved in such warning; sharing ephemeris data and other appropriate operational information with any such operator; modifying spacecraft attitude and/or operations.
- (2) The licensee shall provide the Commission with all information required for the Advance Publication, Coordination and Notification of frequency assignments pursuant to the International Radio Regulations. This includes the preparation of draft materials, to be provided to the Commission prior to submission to the International Telecommunication Union. The authorized operations require notification of frequency assignments pursuant to Article 11 of the ITU Radio Regulations. Licensee shall provide the FCC, not later than 30 days after a frequency assignment is brought into use, the documents required for notification (including SpaceCap Notification MDB file) of such frequency assignments. The licensee shall also prepare materials for informing the ITU that a frequency assignments has been brought into use, or that its use has been suspended or permanently discontinued.
- (3) Licensee is required to coordinate operations with existing microwave users in the area to avoid interference.
- (4) 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.
- (5) The station identification requirements of Section 5.115 of the Commission's Rules are waived.
- (6) Operation is subject to prior coordination with the local Society of Broadcast Engineers, Inc. (SBE) frequency coordinator. Consult the list at http://freq.sbe.org/pdf_files/coordinators.pdf to find the appropriate coordinator.

Special Conditions:

- (7) The occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (8) Following launch of the satellite, the licensee must notify the FCC through electronic submission to the license file, of the status of the satellite (transmissions commenced, etc.), not later than 7 days after commencement or expected commencement of transmissions, and of termination of transmissions, not later than three months after such termination.