

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

EXPERIMENTAL

(Nature of Service)

WF9XGI

(Call Sign)

XT FX MO

(Class of Station)

0071-EX-ST-2013

(File Number)

NAME Space Exploration Technologies Corp. (SpaceX)

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:

Launch communications for ISS supply mission.

Station Locations

- (1) MOBILE: SPACE (Dragon S-Band Directional Array)
- (2) MOBILE: SPACE (Dragon S-Band Omni)
- (3) MOBILE: SPACE (Dragon CUCU Patch Hemispherical)
- (4) Kennedy Space Center (BREVARD), FL - NL 28-37-25; WL 80-41-11

Frequency Information

MOBILE: SPACE (Dragon S-Band Directional Array)

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2216 MHz	MO	546KG1D	70.3 W (ERP)	

This authorization effective March 01, 2013 and will expire 3:00 A.M. EST September 01, 2013

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

MOBILE: SPACE (Dragon S-Band Omni)

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2205.5 MHz	MO	567KF1D	21 W (ERP)	
2216 MHz	MO	12K0G1D	21 W (ERP)	
2231.5 MHz	MO	3M27F1F	20 W (ERP)	

MOBILE: SPACE (Dragon CUCU Patch Hemispherical)

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
400.5 MHz	MO	338KG1D	2.07 W (ERP)	

Kennedy Space Center (BREVARD), FL - NL 28-37-25; WL 80-41-11

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2040.5675 MHz	FX	54K0G2D	100 W (Output Power)	

Special Conditions:

- (1) Operation is subject to prior coordination with the Society of Broadcast Engineers, Inc. (SBE); ATTN: Executive Director; 9102 North Meridian Street, Suite 305; Indianapolis, IN 46260; telephone, (866) 632-4222; FAX, (317) 846-9120; e-mail, executivedir@sbe.org; information, www.sbe.org.
- (2) All SpaceX operations are granted on an experimental basis and shall be conducted on an unprotected, non-interference basis to authorized federal stations.

Special Conditions:

- (3) Use of this STA is limited to this single mission, launch of the second contracted cargo resupply services (CRS-2) mission of SpaceX to the International Space Station (ISS). This STA is limited to the single Dragon launch scheduled, as of February 19, 2013, for no earlier than March 1, 2013. This STA will expire as soon as this Dragon mission has been completed, e.g., recovering of the Dragon capsule, nominally within 24 hours of splashdown. Any future launches will need to submit applications to the FCC to be re-coordinated with NTIA.
- (4) All SpaceX operations shall be consistent with the information e.g., Exhibits, provided in their filings to the FCC for this mission.
- (5) SpaceX shall be aware that future non-federal launches will be considered on a case-by-case basis, especially for requests in the band 2200-2290 MHz, and SpaceX shall have no expectations that future non-federal launches will be approved.
- (6) SpaceX shall coordinate and schedule their operations at least 24 hours prior to planned operation:
 - a. During prelaunch/launch operations with KSC Spectrum Manager (Steve Schindler, steven.f.schindler@nasa.gov) and Cape Canaveral Air Force Station (CCAFS), the Eastern Range Scheduling Office. A local KSC RFA shall be obtained from the KSC spectrum manager; and
 - b. For on-orbit/reentry/splashdown with Jimmy.Nguyen@pentagon.af.mil (301-225-3729), vincent.s.galbraith@nasa.gov, mbielucki@mail.wsc.nasa.gov and catherine.c.sham@nasa.gov.
- (7) The STOP BUZZER POC information, for both ground testing and for launch/on-orbit/reentry operations is:

SpaceX Mission Control Center
Dragon Communication Coordinator Console
Direct: (310) 363-6119

This phone shall be manned by the staff communications coordinator 24/7.
- (8) When docked to the ISS, the operations plan for Dragon following operations shall be provided to Catherine Sham at catherine.c.sham@nasa.gov (281-483-0124); updates to previously agreed transmission times shall be provided for review/concurrence at least 24 hours prior to desired uses:
 - a. Dragon omni-directional antenna-to-TDRS communications on 2216 MHz.
 - b. All Dragon omni-directional antenna-to-Earth communications in the band 2200-2290 MHz.
- (9) Dragon-to-Earth communications on 2205.5 MHz when not docked to the ISS must be immediately terminated if NASA advises that it requires use of the frequency. Usage schedule information shall be provided to Michael Bielucki at mbielucki@mail.wsc.nasa.gov (575-527-7010), Robert W. Ransom at robert.w.ransom@nasa.gov (575-527-7356) with copy to Vincent Galbraith at vincent.s.galbraith@nasa.gov and Catherine Sham at catherine.c.sham@nasa.gov.
- (10) With the exception of operations on 2216 MHz (Emission Designator = 12K4G1D), all transmissions in the band 2200-2290 MHz will comply with national and international power flux-density limits.

Special Conditions:

- (11) SpaceX shall be aware that NTIA does not object to the operations on 2216 MHz that will exceed the PFD for this one mission only. NTIA will review each future mission on a case-by-case basis with the expectation that SpaceX will re-engineer this link to meet applicable PFD limits per the schedule provided to NTIA on January 29, 2013, i.e., around July 1, 2014.
- (12) SpaceX shall turn off the video downlink transmission on 2231.5 MHz prior to docking to the ISS.
- (13) Operations of the Dragon 2 GHz space-to-Earth transmission are limited to transmission when a fixed ground station is within line of sight of the spacecraft.
- (14) At South Point, HI, 2040.5675 MHz power shall be limited to 200W consistent with other earth sites.
- (15) SpaceX shall keep a log of all transmissions in the bands 400.15-401 MHz, 2025-2110 MHz, and 2200-2290 MHz that would be provided to NTIA after the mission. This log should include at least date, time, frequency, eirp density, and pointing direction of the antenna. The log should be provided to the following people at NTIA: skotler@ntia.doc.gov and edavison@ntia.doc.gov.