

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

EXPERIMENTAL

(Nature of Service)

XT MO

(Class of Station)

WS9XKI

(Call Sign)

1000-EX-ST-2021

(File Number)

NAME Space Exploration Holdings, LLC

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:**

Operation of satellite user terminals on experimental basis on vehicles within 250 km of Hawthorne, CA & Redmond, WA & on vessels in U.S. territorial waters within 250 km of each city.

**Station Locations**

- (1) MOBILE: Redmond, WA and in territorial waters., within 22.22 km, centered around NL 47-40-26; WL 122-07-17
- (2) MOBILE: Hawthorne, CA and in territorial waters, within 22.22 km, centered around NL 33-55-10; WL 118-21-14

**Frequency Information**

MOBILE: Redmond, WA and in territorial waters., within 22.22 km, centered around NL 47-40-26; WL 122-07-17

| Frequency       | Station Class | Emission Designator | Authorized Power      | Frequency Tolerance (+/-) |
|-----------------|---------------|---------------------|-----------------------|---------------------------|
| 14000-14500 MHz | MO            | 60M0D7W             | 4.06 W (Output Power) | 0.001 %                   |

This authorization effective July 23, 2021 and  
will expire 3:00 A.M. EST September 18, 2021

**FEDERAL  
COMMUNICATIONS  
COMMISSION**



## Frequency Information

MOBILE: Hawthorne, CA and in territorial waters, within 22.22 km, centered around NL 33-55-10; WL 118-21-14

| Frequency       | Station Class | Emission Designator | Authorized Power      | Frequency Tolerance (+/-) |
|-----------------|---------------|---------------------|-----------------------|---------------------------|
| 14000-14500 MHz | MO            | 60MOD7W             | 4.06 W (Output Power) | 0.001 %                   |

## Special Conditions:

- (1) Operation in the 14.0-14.5 GHz band may not cause unacceptable interference to, or claim protection from, geostationary-satellite networks in accordance with Footnote NG527A.
- (2) Licensee is authorized to conduct tests on 20 units of 0.48m SpaceX UTA-201 earth stations: from a moving vehicle on the ground - vehicle-mounted earth station (VMES) and aboard seagoing vessels (ESV) in U.S. territorial waters within 250 km of Redmond, WA (NL 47-40-26, WL 122-7-17) and Hawthorne, CA (NL 33-55-10, WL 118-21-14), in the 14.0-14.5 GHz frequency band via SpaceX's NGSO satellites.
- (3) POINT OF COMMUNICATION: Space Exploration Technologies Corp. ("SpaceX")'s Ku-band non-geostationary- orbit (NGSO) satellites (S2983/S3018).
- (4) The authorized SpaceX's VMES and ESV must not transmit signals until SpaceX's NGSO satellites in view at an elevation angle of at least 25 degrees.
- (5) The VMES and ESV (ESIMs) must be self-monitoring and, should a condition occur that causes it to exceed EIRP, EIRP density or EIRP mask limits, the ESIMs will automatically cease transmissions within 100 milliseconds and not resume transmissions until the condition that caused the experimental ESIMs to exceed those limits is corrected.
- (6) Operations in the 14.0-14.5 GHz frequency band must be compliance with the equivalent power flux-density limit (-160 dBW/m<sup>2</sup>/40 kHz) of Article 22.5D of the ITU Radio Regulations.
- (7) Operation in the 14.0-14.2 and 14.47-14.5 GHz band within 125 km or within radio line-of-sight of the coordinates specified in 47 CFR 25.228(j)(1) are subject to prior coordination with the NASA GSFC Spectrum Management Office (NASA-DL-GSFC-SPECTRUM-MANAGEMENT@MAIL.NASA.GOV).
- (8) The direction of the authorized SpaceX's VMES or ESV earth station transmit beam and the GSO arc is separated by less than 18°. Operations in the Ku-band (14-14.5 GHz) must always maintain +&- 18° of avoidance angle (exclusion zone) with the GSO arc. As the earth station is tracking SpaceX's NGSO satellites, it must not radiate within +&-18° of the GSO arc.
- (9) ESV's operations authorized pursuant to this license are operations by U.S.-registered ships.

**Special Conditions:**

- (10) Operations of the authorized ESIMs operating in the 14.14.5 GHz frequency band must be compliance with the following additional conditions:
- a. Licensee's ESIMs 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.
  - b. Licensee's ESIMs 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.
  - c. 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.