

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

EXPERIMENTAL

(Nature of Service)

WN9XKS

(Call Sign)

XT MO

(Class of Station)

1657-EX-ST-2018

(File Number)

NAME Virgin Orbit

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:

S-Band transmitter will be used for telemetry and video transmission from the launch vehicle.

Station Locations

(1) MOBILE: Mojave, CA, centered around NL 35-03-24; WL 118-09-28

Frequency Information

MOBILE: Mojave, CA, centered around NL 35-03-24; WL 118-09-28

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2215 MHz	MO	4M99G1W	80 W (ERP)	0.002 %
2215 MHz	MO	2M73G1W	25 W (ERP)	0.002 %

Special Conditions:

- (1) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.

This authorization effective November 17, 2018 and
will expire 3:00 A.M. EST May 18, 2019

**FEDERAL
COMMUNICATIONS
COMMISSION**



Special Conditions:

- (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) All Virgin Orbit operations granted on an experimental basis shall be on an unprotected, noninterference basis to authorized stations. All launch vehicle transmission to the ground shall be precoordinated for clearance for operation in accordance with each of the conditions specified below.
- (4) This STA is limited to launch vehicle communications for the telemetry transmissions and reception, no earlier than 17 November 2018, to support a single flight of the Launcher One satellite launch vehicle. This STA will expire as soon as the launch has been completed or 17 May 2019, whichever occurs first. Applications for any future launches, or modifications to this STA, shall be submitted to the FCC for recoordination with NTIA.
- (5) All transmissions in the band 2200-2290 MHz shall comply with national and international power flux density limits, except in cases where expected exceedances are pre-coordinated and agreed-upon.
- (6) In order to allow the Navy to address the potential for interference, Virgin Orbit must coordinate with the Naval Surface Warfare Center, Dahlgren Division (NSWCDD), Mr. James Moneyhon, (540) 653-3477, or james.moneyhon@navy.mil, a minimum of 21-days prior to the flight test, to assess and mitigate harmful interference to Navy/Marine Corps/DoD operations. Virgin Orbit must also comply with any and all restrictions that may be levied by the Naval Surface Warfare Center, Dahlgren Division (NSWCDD).
- (7) The STOP BUZZER POC information, for launch operations shall be provided to NTI, (bmitchell@ntia.doc.gov). This phone shall be manned 24/7.
- (8) As soon as possible, but no later than 60 business days prior to commencing flight operations, Virgin Orbit shall provide, as a minimum, launch date/window, planned aircraft flight path, and planned Launch One trajectory, transmission frequencies with associated duration/cut-off time to: Jimmy Nguyen (jimmy.nguyen@us.af.mil), Felipe Arroyo (felipe.arroyo-1@nasa.gov, NASA/WFF), Scott Galbraith (vincent.s.galbraith@nasa.gov), Kevin Vipavetz (kevin.g.vipavetz@nasa.gov, NASA/LaRC), Richard Ontiveros (richard.ontiveros1.civ@mail.mil), Stephen Harris (stephen.b.harris6.civ@mail.mil), Carmelo Rivera (carmelo.rivera@noaa.gov), NOAA Satellite Operations Control Center (philip.l.whaley@noaa.gov, NOAA/SOCC), and Cathy Sham (catherine.c.sham@nasa.gov). In the event of last-minute changes, 48-hour notice is required.
- (9) Virgin Orbit requires coordination with VAFB and WAFC at least 2 weeks prior to actual use. The frequencies requested are heavily used in the southern California area and there is a high potential for conflict if they do not coordinate prior to use. VAFB contact for coordination is the FCAC at 805-606-9247. WAFC contact number is 760-939-6832 or 760-939-6948.
- (10) Virgin Orbit must contact the DoD Western Area Frequency Coordinator prior to operations: DoD Western Frequency Coordinator, M/S 3008 130 Easy Road, China Lake, CA 93555, Code 52140MD, CML: 760-939-6832, DSN: 437-6832.