

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

EXPERIMENTAL

(Nature of Service)

WO9XMD

(Call Sign)

XT MO

(Class of Station)

2061-EX-ST-2019

(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:

To receive Telemetry data from LauncherOne rocket S-Band Transmitter during captive carry test flights before space launch.

Station Locations

- (1) MOBILE: Alt. 40,000ft, Airspace R2508, R2515, W289S & W291, Victorville, CA, within 2 km, centered around NL 34-35-03; WL 117-22-44
- (2) MOBILE: Alt. 40,000ft, Airspace R2508, R2515, W289S & W291, Mojave, CA, within 2 km, centered around NL 35-03-24; WL 118-09-28

Frequency Information

MOBILE: Alt. 40,000ft, Airspace R2508, R2515, W289S & W291, Victorville, CA, within 2 km, centered around NL 34-35-03; WL 117-22-44

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2215.5 MHz	MO	4M99G1W 2M73G1W	79.43 W (ERP)	0.002 %

This authorization effective December 06, 2019 and
will expire 3:00 A.M. EST May 06, 2020

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

MOBILE: Alt. 40,000ft, Airspace R2508, R2515, W289S & W291, Mojave, CA, within 2 km, centered around NL 35-03-24; WL 118-09-28

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2215.5 MHz	MO	4M99G1W 2M73G1W	79.43 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.
- (2) Virgin Orbit should be aware that other stations may be licensed on these frequencies and if any interference occurs, Virgin Orbit will be subject to immediate shut down.
- (3) This STA is limited to launch vehicle communications for the telemetry transmissions and reception, no earlier than 6 December 2019, to support the captive carry tests of the Launcher One satellite launch vehicle. This STA will expire as soon as the testing has been completed or 5 May 2020, whichever occurs first. Applications for any future launches, or modifications to this STA, shall be submitted to the FCC for re-coordination with NTIA.
- (4) 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), Scott Galbraith (vincent.s.galbraith@nasa.gov), Richard Ontiveros (richard.ontiveros1.civ@mail.mil), Stephen Harris (stephen.b.harris6.civ@mail.mil), Carmelo Rivera (carmelo.rivera@noaa.gov), and Cathy Sham (catherine.c.sham@nasa.gov). In the event of last-minute changes, 48-hour notice is required.
- (5) Virgin Orbit contact/coordinate prior to operations: Mr. Carl D. Tilander, Regional Spectrum Manager, Marine Corps Installations West (MCIWEST), G-6 Plans Bldg 1270, room 146, Marine Corps Base Camp Pendleton, (MCB CAMPEN) California, 92055, Commercial (760) 725-2808, DSN 361-2808, http://ice.disa.mil/index.cfm?fa=service_provider_list&site_id=148&service_category_MCIWEST_NIPR_OMB:MCIWEST_Spectrum@usmc.mil.
- (6) Virgin Orbit contact/schedule prior to operations: Jamie Heaton, CIV, DOD Western Area Frequency Coordinator, M/S 3008 130 Easy Road, China Lake CA 93555, Code 52140MD, Comm: 760-939-6832, DSN: 437-6832.
- (7) Virgin Orbit contact/coordinate prior to operations: Naval Surface Warfare Center, Dahlgren Division (NSWCDD), Mr. James Moneyhon, (540)653-3477, or james.moneyhon@navy.mil, to mitigate harmful interference to Navy and Marine Corps operations. The launch vehicle provider must also comply with any and all restrictions that may be levied by the Naval Surface Warfare Center, Dahlgren Division (NSWCDD).

Special Conditions:

- (8) Virgin Orbit shall be aware that future non-federal launches requests for the use of 2200-2290 MHz band will be considered on a case-by-case basis and Virgin Orbit shall have no expectations that future launches will be approved for operation in this band.