

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

EXPERIMENTAL

(Nature of Service)

WM9XBD

(Call Sign)

XT MO

(Class of Station)

2151-EX-ST-2018

(File Number)

NAME Virgin Orbit, 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:

The purpose of the experiment is to test the ability of Virgin Orbit, Long Beach ground station (receive only) to track satellite launch vehicles.

Station Locations

- (1) MOBILE: Max altitude 2500 ft, Long Beach, CA, within 33 km, centered around NL 33-49-12; WL 118-09-04

Frequency Information

MOBILE: Max altitude 2500 ft, Long Beach, CA, within 33 km, centered around NL 33-49-12; WL 118-09-04

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2262 MHz	MO	4M99G1W 2M73G1W	158.49 uW (ERP)	0.002 %

Special Conditions:

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

This authorization effective February 19, 2019 and
will expire 3:00 A.M. EST August 06, 2019

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COMMUNICATIONS
COMMISSION**



Special Conditions:

- (3) All Virgin Orbit, LLC operations shall be coordinated at least 7 days in advance with the NASA Goddard Space Flight Center (GSFC) Spectrum Manager, Scott Galbraith at 301.286.5089 or vincent.s.galbraith@nasa.gov.
- (4) The STOP BUZZER POC information, for launch operations shall be provided to NTIA (bmitchell@ntia.doc.gov). This phone shall be manned 24/7.
- (5) Virgin Orbit, LLC shall be aware that launch vehicle transmissions should use the following recommended frequencies to avoid impacts to NASA operations and facilitate successful coordination: 2211.0 +/-4 MHz 2215.0 +/-4 MHz, 2272.5 +/-2 MHz, 2285-2290 MHz.
- (6) All operations shall be pre-coordinated with the Department of Defense Western Area Frequency Coordinator (WAFC).
- (7) 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.
- (8) Virgin Orbit shall coordinate with the Naval Surface Warfare Center, Dahlgren Division (NSWCDD), Mr. James Moneyhon, (540)653-3477, or james.moneyhon@navy.mil, a minimum of 60-days prior to any operations, 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).