

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

EXPERIMENTAL

(Nature of Service)

WM9XDQ

(Call Sign)

XT MO

(Class of Station)

0947-EX-ST-2018

(File Number)

NAME Astra Space, Inc

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:

Telemetry transmissions from Astra Test Launch 2, a suborbital test of a new commercial launch vehicle.

Station Locations

- (1) MOBILE: Launch vehicle stage 1. Sub-orbital from PSC LP2, within 825 km, centered around NL 57-26-04; WL 152-20-34
- (2) MOBILE: Launch vehicle stage 2. Sub-orbital from PSC LP2., within 825 km, centered around NL 57-26-04; WL 152-20-34

Frequency Information

MOBILE: Launch vehicle stage 1. Sub-orbital from PSC LP2, within 825 km, centered around NL 57-26-04; WL 152-20-34

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2208 MHz	MO	3M88F1D	3.8 W (ERP)	0.0003 %
2257 MHz	MO	5M03G1D	3.8 W (ERP)	0.0003 %

This authorization effective September 01, 2018 and
will expire 3:00 A.M. EST March 01, 2019

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

MOBILE: Launch vehicle stage 2. Sub-orbital from PSC LP2., within 825 km, centered around NL 57-26-04; WL 152-20-34

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2235 MHz	MO	996KF1D	3.8 W (ERP)	0.0003 %

Special Conditions:

- (1) This STA is limited to launch vehicle communications for the telemetry transmissions and receptions of the Astra Test Launch 2 of the Rocket 2.0 vehicle. This STA will expire as soon as the launch has been completed or 1 March 2019, whichever occurs first. Applications for any future launches will need to be submitted to the FCC to be re-coordinated with NTIA.
- (2) All transmissions in the band 2200-2290 MHz shall comply with national and international power flux density limits (PFD), except in cases where expected exceedance are pre-coordinated and agreed. PFD analysis and exceedances shall be included in the FCC STA application and provided in the request to the NTIA for US Government review and assessment.
- (3) Astra Space, Inc. 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 Astra Space, Inc. shall have no expectations that future launches will be approved.
- (4) Submit operations plans at least 60 days prior to planned launch date, to the Naval Surface Warfare Center, Dahlgren Division planned launch date, to the Naval Surface Warfare Center, Dahlgren Division (NSWCDD), Mr. James Moneyhon (540)653-3477, or james.moneyhon@navy.mil, for assessment.
- (5) As soon as possible, but no later than 60 business days prior to the planned launch, Astra Space, Inc. is required to provide, as a minimum, launch date/time/window and planned first- and second-stage trajectory, transmission frequencies with associated duration/cut-off time to Jimmy Nguyen (jimmy.nguyen@us.af.mil, AFSMO), Scott Galbraith (vincent.s.galbraith@nasa.gov, NASA/GSFC), Felipe Arroyo (felipe.arroyo-1@nasa.gov, NASA/WFF), (kevin.g.vipavetz@nasa.gov, NASA/LaRC), Stephen Horan (stephen.j.horan@nasa.gov, NASA/LaRC), NOAA Satellite Operations Control Center (philip.l.whaley@noaa.gov), Richard Ontiveros, (richard.ontiveros1@navy.mil, NMSC), and Cathy Sham (catherine.c.sham@nasa.gov). In the event of last-minute changes, 48-hour notice is required.
- (6) The STOP BUZZER POC information, for launch operations shall be provided to NTIA (bmitchell@ntia.doc.gov). This phone shall be manned 24/7.
- (7) Astra Space, Inc. must ensure launch is scheduled through the Alaska Pacific Spaceport Complex is David Wellman: david.wellman@akaerospace.com 256-631-7029.
- (8) Future requests for bandwidths greater than 5 MHz in the band 2200-2290 MHz will not be granted by NTIA, and that this grant is being granted on a one-time-only basis.

Special Conditions:

- (9) Astra Space, Inc 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 Astra Space, Inc shall have no expectations that future launches will be approved.
- (10) In order to mitigate the potential for interference with these naval activities, four blackout zones (BOZs) shall be assumed as follows: (1) 1500 nautical mile radius centered at 22N160W; (2) 1500 nautical mile radius centered at 33.25N119.57W; (3) 1500 nautical mile radius centered at 4.11N175.2W; and (4) 1500 nautical mile radius centered at 57.46N152.38W. These BOZs shall be implemented, unless otherwise coordinated and agreed to by the Naval Surface Warfare Center, Dahlgren Division (NSWCDD). Additionally, Astra Space, Inc. must also comply with any and all restrictions that may be levied by NSWCDD.