

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

EXPERIMENTAL

(Nature of Service)

XR FX MO

(Class of Station)

WR9XTX

(Call Sign)

1273-EX-ST-2026

(File Number)

NAME Dartmouth College

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:

Conduct scientific research associated with understanding Earths Van Allen radiation belts using the REAL cubesat.

Station Locations

- (1) MOBILE: LEO, 500 km altitude, 97.4 degree inclination
- (2) MOBILE: LEO, 500 km altitude, 97.4 degree inclination
- (3) Bozeman, MT - NL 45-39-59; WL 111-02-44

Frequency Information

MOBILE: LEO, 500 km altitude, 97.4 degree inclination

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
450.06 MHz	MO	50K0F1D	922 mW (ERP)	0.001 %

This authorization effective July 18, 2026 and
will expire 3:00 A.M. EST January 16, 2027

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

MOBILE: LEO, 500 km altitude, 97.4 degree inclination

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2202 MHz	MO	4M00G1D	2.2 W (ERP)	0.001 %

Bozeman, MT - NL 45-39-59; WL 111-02-44

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
450.06 MHz	FX	50K0F1D	912 W (ERP)	0.001 %

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) 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) Upon receipt of a conjunction warning from the JSpOC or other source, the licensee must review the warning and take all possible steps to assess and, if necessary, to mitigate collision risk, including, but not limited to: contacting the operator of any active spacecraft involved in such warning; sharing ephemeris data and other appropriate operational information with any such operator; modifying spacecraft attitude and/or operations.
- (4) Operation is subject to prior coordination with the local Society of Broadcast Engineers, Inc. (SBE) frequency coordinator. Consult the list at <http://sbe.org/resources/frequency-coordination/> to find the appropriate coordinator.
- (5) Dartmouth College shall also be aware that long term or operational use of the 2200-2290 MHz frequency band by non-Federal stations is not possible, and Dartmouth College shall have no expectation that future requests for operation or renewal of experimental licenses in this band will be approved.
- (6) This authorization will expire once on-orbit operation is completed, or 15 January 2027, whichever occurs first.
- (7) Dartmouth College shall notify the NASA GSFC Spectrum Management Office at NASA-DL-GSFC-Spectrum-Management@mail.nasa.gov and the NASA JSC Spectrum Management Office at JSC-DL-Spectrum-Management@mail.nasa.gov of all proposed ground station contact dates and times when using a frequency of 2202.0 MHz, at least 2 weeks in advance of operations

Special Conditions:

- (8) All transmissions using a center frequency of 2202 MHz shall cease when the NASA International Space Station (NORAD designation 25544, International Spacecraft ID 1998-067A) is within visual line-of-sight of the REAL CubeSat.
- (9) All transmissions in the band 2200-2290 MHz shall comply with the (PFD) limits of International Telecommunications Union (ITU) Radio Regulations Article 21, the Deep-Space Research Earth Station protection requirements of Recommendation ITU-R SA.1157-1, and the Maximum Unwanted Emission requirements for space services specified in Section 5.6.2 of the NTIA Manual, except in cases where expected non-compliance is pre-coordinated and agreed. Analyses documenting the expected compliance or exceedance of these requirements (PFD, Deep-Space Earth Station protection, and Maximum Unwanted Emissions) shall be included in the FCC STA application and provided in the request to the NTIA for US Government review and assessment
- (10) Prior to commencing operations, the STOP BUZZER POC information for all operations shall be provided to NTIA (ravery@ntia.gov), Air Force (Jimmy.Nguyen@us.af.mil), and NASA GSFC Spectrum Management Office (NASA-DL-GSFC-Spectrum-Management@mail.nasa.gov). This phone shall be manned during all operational periods.
- (11) Commercial launch service providers should be aware that a satellite integrated into a launch vehicle or deployment device without a current FCC authorization may need to be removed from that vehicle or deployment device if the satellite operator's application for an FCC authorization is not acted upon favorably, or for various reasons cannot be granted within a time frame consistent with the launch schedule. Commercial launch providers should exercise due diligence to verify satellite operator's regulatory approvals prior to launch (FCC Enforcement Advisory DA 18-368).
- (12) Stop Buzzer POC is Robyn M. Millan, Email: robyn.m.millan@dartmouth.edu, 603 667-5176.
- (13) POINT OF COMMUNICATION: REAL cubesat.
- (14) Operations within part 90 bands must comply with all applicable rules under par 90, including but not limited to, the requirements for protecting centralized trunked incumbents as specified in section 90.187.
- (15) Further requests for extension of the authority granted herein must be filed on Form 442, "Application for New or Modified Radio Station Authorization under Part 5 of FCC Rules - Experimental Radio Service." Future STA requests to extend this authorization will not be considered.