

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

EXPERIMENTAL

(Nature of Service)

WR9XCG

(Call Sign)

XT FX MO

(Class of Station)

2280-EX-ST-2019

(File Number)

NAME Massachusetts Institute of Technology: STAR Lab, Beavercube

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:

In collaboration with MIT and Woods Hole Oceanographic Institute, to operate a 3U CubeSat in Low Earth Orbit.

Station Locations

- (1) Cambridge (MIDDLESEX), MA - NL 42-21-38; WL 71-05-36
- (2) MOBILE: NGSO; 410 km; 51.64 deg.

Frequency Information

Cambridge (MIDDLESEX), MA - NL 42-21-38; WL 71-05-36

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
450.11-450.25 MHz	FX	25K0F1D	2317 W (ERP)	

This authorization effective June 01, 2022 and
will expire 3:00 A.M. EST December 01, 2022

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

MOBILE: NGSO; 410 km; 51.64 deg.

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
401.47-401.53 MHz	MO	25K0F1D	543 mW (ERP)	
1615-1617.5 MHz	MO	1M23G7W	107.89 mW (ERP)	

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.
- (3) Following launch of the satellite, the licensee must notify the FCC through electronic submission to the license file, of the status of the satellite (transmissions commenced, etc.), not later than 7 days after commencement or expected commencement of transmissions, and of termination of transmissions, not later than three months after such termination.
- (4) 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.
- (5) POINT OF COMMUNICATION: BEAVERCUBE Satellite
- (6) MIT is required to provide USSF, David Pooley, Email: david.pooley@spaceforce.mil with satellite contact schedule, once established.
- (7) MIT contact US Space Force (USSF), David Pooley, Email: david.pooley@spaceforce.mil, to initiate pre-launch cooperative EMC testing as agreed during coordination between MIT and USSF.
- (8) BeaverCube operations (including jettison and on-orbit operations) shall be coordinated with the NASA Johnson Space Center Spectrum Management Office (JSC-DLSPECTRUM-MANAGEMENT@MAIL.NASA.GOV) prior to jettison from the NASA International Space Station (ISS). Massachusetts Institute of Technology shall comply with any and all restrictions that may be levied by the NASA JSC Spectrum Management Office to protect NASA ISS operations.
- (9) Transmissions from the Cambridge, MA earth station to the BeaverCube CubeSat shall be limited to the 450.11-450.250 MHz frequency band, in order to prevent harmful interference to federal satellite operations.
- (10) This license SUPERSEDES the previously issued license with the same call sign and file number: to add Special Condition 11.

Special Conditions:

- (11) Massachusetts Institute of Technology: STAR Lab, Beavercube operations in the 401.47-401.53 MHz (space-to-Earth) frequency band shall not exceed the long-term interference criteria specified in Table 2 (Type C) of Recommendation ITU-R RS.1263-2 in order to protect DoC/NOAA radiosondes operations in the United States.