

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

EXPERIMENTAL

(Nature of Service)

XT MO

(Class of Station)

WO9XPU

(Call Sign)

0081-EX-ST-2021

(File Number)

NAME Cornell University

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:

Downlink data from CORNELL PAN Project experiment.

Station Locations

- (1) MOBILE: LEO, 500 km (A)
- (2) MOBILE: LEO, 500 km (A)
- (3) MOBILE: LEO, 500 km (B)
- (4) MOBILE: LEO, 500 km (B)

Frequency Information

MOBILE: LEO, 500 km (A)

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
915-928 MHz	MO	250KF1D	0.025 W (ERP)	0.0084 %

This authorization effective June 01, 2021 and
will expire 3:00 A.M. EST December 01, 2021

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

MOBILE: LEO, 500 km (A)

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1618.725-1626.5 MHz	MO	41K7Q7W	1.28 W (ERP)	0.000159 %

MOBILE: LEO, 500 km (B)

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
915-928 MHz	MO	250KF1D	0.025 W (ERP)	0.0084 %

MOBILE: LEO, 500 km (B)

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1618.725-1626.5 MHz	MO	41K7Q7W	1.28 W (ERP)	0.000159 %

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) 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.
- (3) 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.
- (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.

Special Conditions:

- (5) The licensee shall provide the Commission with all information required for the Advance Publication, Coordination and Notification of frequency assignments pursuant to the International Radio Regulations. This includes the preparation of draft materials, to be provided to the Commission prior to submission to the International Telecommunication Union. The authorized operations require notification of frequency assignments pursuant to Article 11 of the ITU Radio Regulations. Licensee shall provide the FCC, not later than 30 days after a frequency assignment is brought into use, the documents required for notification (including SpaceCap Notification MDB file) of such frequency assignments. The licensee shall also prepare materials for informing the ITU that a frequency assignment has been brought into use, or that its use has been suspended or permanently discontinued.
- (6) Following conclusion of the rendezvous and proximity operations mission, propellant remaining on the spacecraft must be used to lower spacecraft altitude for purposes of minimizing the satellite's remaining time in orbit.
- (7) POINT OF COMMUNICATION: Pan A and Pan B CubeSat satellites.
- (8) Cornell University must obtain the appropriate licensing of the link from the Iridium satellites to the PAN Project CubeSats.
- (9) This concurrence is only valid for a planned orbit of 500 km altitude using an orbital inclination of 45 degrees. Any changes to the planned orbit shall require a new application to the FCC to be re-coordinated with the NTIA.
- (10) During the test process, while transmitting, the antenna elevation is required to be set to 90 degrees in order to minimize the potential of radiating toward the horizon or any GEO satellites.
- (11) Cornell University must provide AFSMO (Jimmy Nguyen, 301-225-3729, jimmy.nguyen@us.af.mil) and HQ USSF (David Pooley, 719 554-6400, david.pooley@us.af.mil) with specific test frequencies and schedule prior to testing.
- (12) Cornell University must coordinate with the Naval Surface Warfare Center, Dahlgren Division (NSWCDD), Mr. James Moneyhon, (540)653-3477, or james.moneyhon@navy.mil, a minimum of 24 hours prior to any operations.