

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

EXPERIMENTAL

(Nature of Service)

WM9XJO

(Call Sign)

XR MO

(Class of Station)

0301-EX-ST-2018

(File Number)

NAME Center for Remote Sensing of Ice Sheets, University of Kansas

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:

We will be conducting limited airborne surveys as part of NASAs Operation Ice Bridge in Alaska.

Station Locations

(1) MOBILE: Fairbanks, AK. Exact locations are submitted as an exhibit

Frequency Information

MOBILE: Fairbanks, AK. Exact locations are submitted as an exhibit

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
550-950 MHz	MO	400MQ3N	10 W (ERP)	
2-2.7 GHz	MO	700MQ3N	10 W (ERP)	
2.9-3.7 GHz	MO	800MQ3N	10 W (ERP)	

This authorization effective March 20, 2018 and
will expire 3:00 A.M. EST April 01, 2018

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

MOBILE: Fairbanks, AK. Exact locations are submitted as an exhibit

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
4.2-18 GHz	MO	13G8Q3N	10 W (ERP)	

Special Conditions:

- (1) Operation is subject to prior coordination with affected Educational Broadband Service/Broadband Radio Service (EBS/BRS) licensees.
- (2) Licensee POC shall submit a "Stop Buzzer" contact to FirstNet at peter.tomczak@firstnet.gov upon authorization issuance with "kill switch" authority; license POC agrees to immediately cease operations on Band 14 if notified of any interference concerns until any issues are resolved.
- (3) Licensee agrees that this license may be subject to further review by the FCC and possible re-coordination with FirstNet.
- (4) Licensee must prior coordinate testing with other authorized Band 14 operations. Failure to effectively coordinate shall result in FirstNet seeking immediate suspension of the experimental license by the FCC.
- (5) Licensee must accept interference from others operating in the band and must not cause interference to FirstNet operations or those approved to operate in Band 14 per license (i.e. AT&T testing or public safety entities authorized to operate on Band 14).
- (6) Licensee is required to coordinate operations with existing microwave users in the area to avoid interference.
- (7) Operation in the 1695-1780 MHz, 1915-1920 MHz, 1995-2020 MHz or 2110-2200 MHz band requires consent of local Advanced Wireless Service (AWS) licensee(s) to avoid interference.
- (8) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (9) Operation is subject to prior coordination with the local Society of Broadcast Engineers, Inc. (SBE) frequency coordinator. Consult the list at http://freq.sbe.org/pdf_files/coordinators.pdf to find the appropriate coordinator.
- (10) 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.

Special Conditions:

- (11) Operation is subject to consent of the following licensees within 50 miles of the test area:
- *700 MHz licensees (698-758 MHz and 775-788 MHz)
 - *SMR licensees (809-824 MHz/854-869 MHz)
 - *Cellular licensees (824-849 MHz/869-894 MHz)
 - *Commercial Air-Ground licensee (849-851 MHz/894-896 MHz)
 - *SMR licensees (896-901 MHz/935-940 MHz)
 - *Narrowband PCS licensees (901-902 MHz)
 - *Location & Monitoring Service licensees (902-928 MHz)
 - *Paging Service licensees in 929 MHz and 931 MHz
 - *WCS licensees (2305-2320 MHz/2345-2360 MHz)
 - *Aerospace and Flight Test Radio Coordinating Council (AFTRCC), concerning Aeronautical and
 - *Fixed frequencies (2360-2390 MHz)
- (12) Maintain operation separation from the grandfathered earth stations as defined in Part 90, Sub-part Z, or coordinate an agreement with the grandfathered earth station licensees.
- (13) Consult the ULS database to ensure that the operation will not cause harmful interference to any existing registered stations in the 3650-3700 MHz band, and notify the registered users in the proposed area.
- (14) Center for Remote Sensing of Ice Sheets, University of Kansas must notch out 2700 – 2900 MHz and 3700 – 4200 MHz. Future operations outside of these areas may require further notching of other frequency bands. This radio system shall not be used for functional development beyond the scope of this Ice Sheet testing.
- (15) Center for Remote Sensing of Ice Sheets, University of Kansas must coordinate with JFMO Alaska and supply exact flight days and times prior to performing survey. POC for JFMO Alaska is:
Robert Craig
robert.craig.12@us.af.mil
907-552-8223
- (16) Center for Remote Sensing of Ice Sheets, University of Kansas must notch out 2202.5 MHz, 2252.5 MHz, and 2282.5 MHz.
- (17) Operation must be consented by SDARS licensee(s) within 2320-2345 MHz.
- (18) Prior to operations in the 2085.6875 MHz, 2025-2110 MHz, and 8025-8400 MHz, applicant must notify and obtain a written consent from satellite operators. To request this consent, please contact the potentially-affected station operators: Terra Bella Technologies Inc. (Mr. Craig Scheffler at 720-238-5634), Planet Labs, Inc. (Mr. Michael Safyan at 415-829-3313) and Digitalglobe (Mr. Demitrius M Anthony at 703-480-6338) for the proposed operations.
- (19) Prior to operations in the 2483-2500 MHz licensee must notify the potentially-affected earth station operator Globalstar (Mr. David Weinreich, Email: David.Weinreich@globalstar.com) and obtain its written consent to the proposed operations.

Special Conditions:

- (20) Prior to operation in the 3700-4200 MHz, 5850-7025 MHz, 10700-12200 MHz and 13750-14500 MHz, licensee must notify the potentially-affected earth station operators that are located within a 30 mile radius of the experimental transmitter and obtain their written consent to the proposed operations. Consult MyIBFS database to identify all existing earth stations within a 30 mile radius for each proposed experimental area of operation. The coordinates of these stations are available at <http://www.fcc.gov/ib/sd/3650/grandftr.pdf>.
- (21) Licensee must avoid pointing the transmitting antenna within 15 degrees of any point on the geostationary orbit arc while transmitting signals in the 3700-4200 MHz, 5850-7025 MHz, 10700-12200 MHz and 13750-14500 MHz bands.
- (22) Licensee must ensure that the transmitting antenna(s) main beam do not point above the horizon in order to protect satellite space stations operating in overlapping frequency bands.
- (23) With respect to proposed operation in the 4500-4800 MHz (space-to-Earth), 6725-7025 MHz (Earth-to-space), 10.70-10.95 GHz (space-to-Earth), 11.20-11.45 GHz (space-to-Earth), and/or 12.75-13.25 GHz (Earth-to-space) bands, the proposed operation MUST take into account the applicable requirements of Appendix 30B of the ITU Radio Regulations (incorporated by reference, see §25.108) and it is compatible with other U.S. ITU filings under Appendix 30B.
- (24) Prior to operations in the 5091-5250 MHz and 6875-7055 MHz, applicant must obtain a written consent from Globalstar satellite operator. To request this consent, please contact the potentially-affected station operators: L. Barbee Ponder IV,
Company: Globalstar Licensee LLC
Email: Barbee.Ponder@globalstar.com
- (25) The stop buzzer contact for this project is Jennifer Laverentz, Phone: 785-864-7722,
Email: jenlav@ku.edu
- (26) Prior to operations in the 12.2-12.75 GHz and 17.3-17.7 GHz bands, applicant must obtain a written consent from Dish Network, EchoStar and DirecTV/AT&T. To request this consent, please contact:
Contact: Jack Wengryniuk
Company: Direct TV/AT&T
Email: JWengryniuk@DIRECTV.com
Contact: Jaime Londono
Company: EchoStar
Email: Jaime.londono@echostar.com
Contact: Mariam Sorond
Company: DISH Network
Email: Mariam.sorond@dish.com
- (27) Station authorized herein must not be used to provide air traffic control communications.