

**United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
RADIO STATION CONSTRUCTION PERMIT
AND LICENSE**

EXPERIMENTAL
(Nature of Service)

WK2XQH
(Call Sign)

XT FX MO
(Class of Station)

0924-EX-CN-2019
(File Number)

NAME North Carolina State University

Subject to the provisions of the Communications Act of 1934, subsequent acts, and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions and requirements set forth in this license, the licensee hereof is hereby authorized to use and operate the radio transmitting facilities hereinafter described for radio communications in accordance with the program of experimentation described by the licensee in its application for license.

Operation: In accordance with Sec. 5.3(J) of the Commission's Rules

Station Locations

- (1) Raleigh (WAKE), NC - NL 35-46-29; WL 78-39-24; MOBILE: , within 10 km, centered around NL 35-46-29; WL 78-39-24

Frequency Information

Raleigh (WAKE), NC - NL 35-46-29; WL 78-39-24; MOBILE: , within 10 km, centered around NL 35-46-29; WL 78-39-24

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2500-2690 MHz	FX	50K0F1D 40M0D9D 40M0D1D 25K0F3E	10 W (ERP)	
2500-2690 MHz	MO	40K0F1D 40M0D9D 40M0D1D 25K0F3E	2 W (ERP)	
3550-3700 MHz	FX	40K0F1D	10 W (ERP)	

This authorization effective January 23, 2020 and
will expire 3:00 A.M. EST February 01, 2021

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

Raleigh (WAKE), NC - NL 35-46-29; WL 78-39-24; MOBILE: , within 10 km, centered around NL 35-46-29; WL 78-39-24

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
3550-3700 MHz	FX	40M0D9D 40M0D1D 25K0F3E	10 W (ERP)	
3550-4200 MHz	MO	40K0F1D 40M0D9D 40M0D1D 25K0F3E	2 W (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) Prior to operation, experimental licensee, must notify licensees of FSS earth stations operating the 3650-4200 MHz within 20-kilometer radius of the locations from which experimental operations will occur. Experimental licensee must also provide such notification to the National Spectrum Managers Association frequency coordinators by email. (see http://wireless.fcc.gov/services/index.htm?job=licensing_1&id=microwave). The notice must include the name and contact information of the stop buzzer personnel that will be available to cease operations in the event of reported interference. The notification should include the testing parameters (specific location(s), antenna gain(s), antenna pattern, antenna height(s), antenna orientation, eirp density) and day and times of each test. Consult the IBFS database to identify licensed earth station in the band 3650-4200 MHz band.
- (4) Experimental station shall use the minimum power level necessary to establish communications links to minimize potential interference to licensed users.
- (5) This authorization is without prejudice to any determination that the Commission may make regarding pending or future experimental satellite earth station application:
- (6) No automatic renewal for operations in the 3650-4200 MHz band of this authorization.

Special Conditions:

- (7) North Carolina State University must obtain consents from the Educational Broadband Service and the Broadband Radio Service licensees prior to operation in 2500-2690 MHz range.
- (8) North Carolina State University must maintain operation separation from the grandfathered earth stations as defined in Part 90, Subpart Z, or coordinate an agreement with the grandfathered earth station licensees prior to operation in 3650-3700 MHz band.
- (9) North Carolina State University must 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 geographic areas prior to operation in this band.
- (10) North Carolina State University must coordinate with the affected Fixed Microwave Service licensees prior to operation in 2700-4200 MHz band.
- (11) The following directive applies to the 2500 MHz - 2690 MHz frequency spectrum band:
 - > Unmanned Airborne operations will be conducted inside restricted airspace and manned airborne operations will be conducted outside restricted airspace.