

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

EXPERIMENTAL

(Nature of Service)

WM2XAV

(Call Sign)

XC FX MO

(Class of Station)

0677-EX-CN-2021

(File Number)

NAME _____ Insitu _____

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(c) of the Commission's Rules

Station Locations

- (1) Bingen, WA - NL 45-42-23; WL 121-27-29; MOBILE: , within 5 km, centered around NL 45-42-23; WL 121-27-29
- (2) MOBILE: Boardman, OR, within 2 km, centered around NL 45-44-54; WL 119-47-38
- (3) MOBILE: Boardman, OR. Airborne up to 5,000 Feet Flight level, within 50 km, centered around NL 45-44-54; WL 119-47-38
- (4) MOBILE: Tillamook, OR, within 2 km, centered around NL 45-25-09; WL 123-48-52
- (5) MOBILE: Tillamook, OR. Airborne up to 10,000 Feet Flight Level, within 110 km, centered around NL 45-25-09; WL 123-48-52
- (6) MOBILE: Pendleton, OR, within 2 km, centered around NL 45-41-21; WL 118-50-32
- (7) MOBILE: Pendleton, OR. Airborne up to 15,000 Feet Flight Level, within 150 km, centered around NL 45-14-53; WL 118-29-56
- (8) MOBILE: Hood River, OR, within 2 km, centered around NL 45-42-41; WL 121-31-11
- (9) MOBILE: Hood River, OR. Manned Airborne up to 15,000 Feet Flight Level, within 140 km, centered around NL 45-40-18; WL 121-32-24
- (10) MOBILE: Manned Airborne up to 20,000 Feet Flight Level, within 100 km, centered around NL 45-43-08; WL 120-10-32
- (11) Bald Peter, OR - NL 44-39-22; WL 121-41-33
- (12) Long Branch, OR - NL 45-34-31; WL 121-46-12
- (13) Grey Butte, OR - NL 44-25-04; WL 121-05-50
- (14) Jackass Springs, OR - NL 45-31-19; WL 120-46-58
- (15) Dee, OR - NL 45-34-31; WL 121-46-13
- (16) Opal City, OR - NL 45-25-04; WL 121-05-51

This authorization effective November 01, 2021 and
will expire 3:00 A.M. EST September 01, 2023

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

Bingen, WA - NL 45-42-23; WL 121-27-29; MOBILE: , within 5 km, centered around NL 45-42-23; WL 121-27-29

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	4 W (ERP)	
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	
1780-1850 MHz	FX	200KG1D 15M2G1D	960 W (ERP)	
1780-1850 MHz	FX	200KG1D 15M2G1D	4 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	4 W (ERP)	
4400-4990 MHz	FX	200KG1D 15M2G1D	7448 W (ERP)	
4400-4990 MHz	FX	200KG1D 15M2G1D	4 W (ERP)	

Frequency Information

MOBILE: Boardman, OR, within 2 km, centered around NL 45-44-54; WL 119-47-38

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	
1780-1850 MHz	MO	200KG1D 15M2G1D	960 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
4400-4990 MHz	MO	200KG1D 15M2G1D	7448 W (ERP)	

MOBILE: Boardman, OR. Airborne up to 5,000 Feet Flight level, within 50 km, centered around NL 45-44-54; WL 119-47-38

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
1780-1850 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
2200-2290 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	

Frequency Information

MOBILE: Boardman, OR. Airborne up to 5,000 Feet Flight level, within 50 km, centered around NL 45-44-54; WL 119-47-38

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2360-2390 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
4400-4990 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	

MOBILE: Tillamook, OR, within 2 km, centered around NL 45-25-09; WL 123-48-52

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	
1780-1850 MHz	MO	200KG1D 15M2G1D	960 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
4400-4990 MHz	MO	200KG1D 15M2G1D	7448 W (ERP)	

Frequency Information

MOBILE: Tillamook, OR. Airborne up to 10,000 Feet Flight Level, within 110 km, centered around NL 45-25-09; WL 123-48-52

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
1780-1850 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
2200-2290 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
2360-2390 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
4400-4990 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	

MOBILE: Pendleton, OR, within 2 km, centered around NL 45-41-21; WL 118-50-32

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	
1780-1850 MHz	MO	200KG1D 15M2G1D	960 W (ERP)	

Frequency Information

MOBILE: Pendleton, OR, within 2 km, centered around NL 45-41-21; WL 118-50-32

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
4400-4990 MHz	MO	200KG1D 15M2G1D	7448 W (ERP)	

MOBILE: Pendleton, OR. Airborne up to 15,000 Feet Flight Level, within 150 km, centered around NL 45-14-53; WL 118-29-56

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
1780-1850 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
2200-2290 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
2360-2390 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
4400-4990 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	

Frequency Information

MOBILE: Hood River, OR, within 2 km, centered around NL 45-42-41; WL 121-31-11

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	
1780-1850 MHz	MO	200KG1D 15M2G1D	960 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
4400-4990 MHz	MO	200KG1D 15M2G1D	7448 W (ERP)	

MOBILE: Hood River, OR. Manned Airborne up to 15,000 Feet Flight Level, within 140 km, centered around NL 45-40-18; WL 121-32-24

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
1780-1850 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
2200-2290 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	

Frequency Information

MOBILE: Hood River, OR. Manned Airborne up to 15,000 Feet Flight Level, within 140 km, centered around NL 45-40-18; WL 121-32-24

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2360-2390 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
4400-4990 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	

MOBILE: Manned Airborne up to 20,000 Feet Flight Level, within 100 km, centered around NL 45-43-08; WL 120-10-32

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
1780-1850 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
2200-2290 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
2360-2390 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	
4400-4990 MHz	MO	200KG1D 15M2G1D	4 W (ERP)	

Frequency Information

Bald Peter, OR - NL 44-39-22; WL 121-41-33

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	
1780-1850 MHz	FX	200KG1D 15M2G1D	960 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
4400-4990 MHz	FX	200KG1D 15M2G1D	7448 W (ERP)	

Long Branch, OR - NL 45-34-31; WL 121-46-12

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	
1780-1850 MHz	FX	200KG1D 15M2G1D	960 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	

Frequency Information

Long Branch, OR - NL 45-34-31; WL 121-46-12

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
4400-4990 MHz	FX	200KG1D 15M2G1D	7448 W (ERP)	

Grey Butte, OR - NL 44-25-04; WL 121-05-50

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	
1780-1850 MHz	FX	200KG1D 15M2G1D	960 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
4400-4990 MHz	FX	200KG1D 15M2G1D	7448 W (ERP)	

Jackass Springs, OR - NL 45-31-19; WL 120-46-58

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	

Frequency Information

Jackass Springs, OR - NL 45-31-19; WL 120-46-58

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1780-1850 MHz	FX	200KG1D 15M2G1D	960 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
4400-4990 MHz	FX	200KG1D 15M2G1D	7448 W (ERP)	

Dee, OR - NL 45-34-31; WL 121-46-13

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	
1780-1850 MHz	FX	200KG1D 15M2G1D	960 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
4400-4990 MHz	FX	200KG1D 15M2G1D	7448 W (ERP)	

Frequency Information

Opal City, OR - NL 45-25-04; WL 121-05-51

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1370-1390 MHz	FX	200KG1D 15M2G1D	1208 W (ERP)	
1780-1850 MHz	FX	200KG1D 15M2G1D	960 W (ERP)	
2200-2290 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
2360-2390 MHz	FX	200KG1D 15M2G1D	3405 W (ERP)	
4400-4990 MHz	FX	200KG1D 15M2G1D	7448 W (ERP)	

Special Conditions:

- (1) This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to authorization with the Western Area Frequency Coordinator (WAFC) who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the WAFC as necessary to ensure compatibility with existing uses.
- (2) One or more frequency assignments were coordinated prior to authorization with FAA Headquarters, 800 Independence Avenue, S.W., Washington, DC 20591; Telephone: 202-267-8699.
- (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) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (5) The station identification requirements of Section 5.115 of the Commission's Rules are waived.

Special Conditions:

- (6) This authorization is issued for the express purpose of conducting experimental operations described in the related application and required by the U.S. Government. The use of this radio station in any other manner or for any other purpose will constitute a violation of the privileges herein authorized. Except as subsequently authorized by the Commission, this radio station shall not be operated after the expiration date of the contract designated in the related application and enumerated above.
- (7) Notification shall be provided to the NASA GSFC Spectrum Management Office at NASA-DL-GSFC-SPECTRUMMANAGEMENT@MAIL.NASA.GOV, at least 3 days prior to operation.
- (8) Since 4430-4900 MHz is shared with other fixed and mobile users, the proponent and any third-party Federal agency sponsor must coordinate with other Federal agencies and non-Federal experimental licensees to deconflict proper discrete frequency channels for usage at this location. FAA concurrence with this frequency band is for experimental purposes only and is not an endorsement of further development of this band for aeronautical usage. The operation of Unmanned Aircraft Systems must comply with all applicable parts of 14 CFR, including but not limited to Parts 21, 45, 47, 61, and 91.
- (9) Stop buzzer is Insitu Operations Action Center at (509) 493-4691.