

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

EXPERIMENTAL

(Nature of Service)

WG2XFB

(Call Sign)

XC FX MO

(Class of Station)

0208-EX-CR-2019

(File Number)

NAME Navmar Applied Sciences Corporation

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) Warren Grove (OCEAN), NJ - NL 39-41-54; WL 74-23-46; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km
- (2) Ivyland (BUCKS), PA - NL 40-13-39; WL 75-03-54
- (3) Slatington (LEHIGH), PA - NL 40-45-48; WL 75-36-17; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, centered around NL 40-45-48; WL 75-36-17
- (4) Rome (ONEIDA), NY - NL 43-14-01; WL 75-24-25; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, centered around NL 43-14-01; WL 75-24-25
- (5) Rio Grande (CAPE MAY), NJ - NL 39-00-30; WL 74-54-30; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, centered around NL 39-00-30; WL 74-54-30
- (6) West Creek (OCEAN), NJ - NL 39-39-55; WL 74-18-28; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, centered around NL 39-39-55; WL 74-18-28
- (7) Benson (COCHISE), AZ - NL 31-59-58; WL 110-21-28; MOBILE: airborne max altitude 8,000 ft MSL, within 14 km, centered around NL 31-59-58; WL 110-21-28

Frequency Information

Warren Grove (OCEAN), NJ - NL 39-41-54; WL 74-23-46; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
902-928 MHz	FX	300KF1D 230KF1D	1.65 W (ERP)	3 %

This authorization effective June 01, 2019 and
will expire 3:00 A.M. EST January 31, 2020

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

Warren Grove (OCEAN), NJ - NL 39-41-54; WL 74-23-46; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
902-928 MHz	FX	300KF1D 230KF1D	50 W (ERP)	3 %
902-928 MHz	MO	230KF1D 300KF1D	1.65 W (ERP)	3 %
1380-1390 MHz	MO	230KF1D	4 W (ERP)	1.5 %
1380-1390 MHz	FX	230KF1D	1 W (ERP)	1.5 %
1380-1390 MHz	FX	230KF1D	2 kW (ERP)	1.5 %
1780 MHz	MO	18M0F3F	10 W (ERP)	
1820 MHz	MO	18M0F3F	10 W (ERP)	
2407.5-2467.5 MHz	FX	126KG7D	125 mW (Output Power)	

Ivyland (BUCKS), PA - NL 40-13-39; WL 75-03-54

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
902-928 MHz	FX	300KF1D	50 W (ERP)	3 %

Frequency Information

Ivyland (BUCKS), PA - NL 40-13-39; WL 75-03-54

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
902-928 MHz	FX	230KF1D	50 W (ERP)	3 %
902-928 MHz	FX	300KF1D 230KF1D	1.65 W (ERP)	3 %
1380-1390 MHz	FX	230KF1D	1 W (ERP)	1.5 %
1380-1390 MHz	FX	230KF1D	2 kW (ERP)	1.5 %
1780 MHz	FX	18M0F3F	10 W (ERP)	
1820 MHz	FX	18M0F3F	10 W (ERP)	
2407.5-2467.5 MHz	FX	126KG7D	125 mW (Output Power)	

Slatington (LEHIGH), PA - NL 40-45-48; WL 75-36-17; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, centered at

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
902-928 MHz	MO	300KF1D 230KF1D	1.65 W (ERP)	3 %
902-928 MHz	FX	300KF1D	1.65 W (ERP)	3 %

Frequency Information

Slatington (LEHIGH), PA - NL 40-45-48; WL 75-36-17; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, centered at

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
902-928 MHz	FX	230KF1D	1.65 W (ERP)	3 %
1380-1390 MHz	FX	230KF1D	1 W (ERP)	1.5 %
1780 MHz	MO	18M0F3F	10 W (ERP)	
1820 MHz	MO	18M0F3F	10 W (ERP)	
2407.5-2467.5 MHz	FX	126KG7D	125 mW (Output Power)	

Rome (ONEIDA), NY - NL 43-14-01; WL 75-24-25; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, centered around

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
902-928 MHz	MO	300KF1D 230KF1D	1.65 W (ERP)	3 %
902-928 MHz	FX	300KF1D 230KF1D	50 W (ERP)	3 %
902-928 MHz	FX	230KF1D 300KF1D	1.65 W (ERP)	3 %

Frequency Information

Rome (ONEIDA), NY - NL 43-14-01; WL 75-24-25; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, centered aro

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1380-1390 MHz	MO	230KF1D	4 W (ERP)	1.5 %
1380-1390 MHz	FX	230KF1D	1 W (ERP)	1.5 %
1380-1390 MHz	FX	230KF1D	2 kW (ERP)	1.5 %
1780 MHz	MO	18M0F3F	10 W (ERP)	
1820 MHz	MO	18M0F3F	10 W (ERP)	
2407.5-2467.5 MHz	FX	126KG7D	125 mW (Output Power)	

Rio Grande (CAPE MAY), NJ - NL 39-00-30; WL 74-54-30; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, cente

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
902-928 MHz	MO	300KF1D 230KF1D	1.65 W (ERP)	3 %
902-928 MHz	FX	300KF1D 230KF1D	1.65 W (ERP)	3 %

Frequency Information

Rio Grande (CAPE MAY), NJ - NL 39-00-30; WL 74-54-30; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, cente

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1380-1390 MHz	FX	230KF1D	1 W (ERP)	1.5 %
1780 MHz	MO	18M0F3F	10 W (ERP)	
1820 MHz	MO	18M0F3F	10 W (ERP)	
2407.5-2467.5 MHz	FX	126KG7D	125 mW (Output Power)	

West Creek (OCEAN), NJ - NL 39-39-55; WL 74-18-28; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, centered

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
902-928 MHz	MO	300KF1D 230KF1D	1.65 W (ERP)	3 %
902-928 MHz	FX	300KF1D 230KF1D	1.65 W (ERP)	3 %
1380-1390 MHz	FX	230KF1D	1 W (ERP)	1.5 %
1780 MHz	MO	18M0F3F	10 W (ERP)	

Frequency Information

West Creek (OCEAN), NJ - NL 39-39-55; WL 74-18-28; MOBILE: airborne max altitude 14,000 ft AGL, within 14 km, centered at

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1820 MHz	MO	18M0F3F	10 W (ERP)	
2407.5-2467.5 MHz	FX	126KG7D	125 mW (Output Power)	

Benson (COCHISE), AZ - NL 31-59-58; WL 110-21-28; MOBILE: airborne max altitude 8,000 ft MSL, within 14 km, centered at

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
902-928 MHz	MO	300KF1D 230KF1D	1.65 W (ERP)	3 %
902-928 MHz	FX	300KF1D 230KF1D	1.65 W (ERP)	3 %
1380-1390 MHz	FX	230KF1D	1 W (ERP)	1.5 %
1780 MHz	MO	18M0F3F	10 W (ERP)	
1820 MHz	MO	18M0F3F	10 W (ERP)	
2407.5-2467.5 MHz	FX	126KG7D	125 mW (Output Power)	

Special Conditions:

- (1) Assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900, or 9000-9200 MHz was coordinated prior to authorization with the FAA Eastern Coordinator, New York, NY. Use of frequencies under the authority of this assignment is subject to such further coordination with the FAA Eastern Coordinator, New York, NY, as necessary to ensure compatibility with existing uses.
- (2) The station identification requirements of Section 5.115 of the Commission's Rules are waived.
- (3) The occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (4) Use of this frequency for UAS flights south of Interstate 10 requires coordination with DoD AFC AZ no less than 96 hours prior to intended use and use is not assured for any time period due to planned or ongoing spectrum use at Fort Huachuca/EPG.
- (5) This license is granted in part. Licensee may not operate on the MAG frequencies 320 MHz and 370 MHz until a valid stop buzzer point of contact who has authorization and ability to immediately shut down operations and a valid military point of contact with phone number are provided. At that point, licensee should file a request for modification of license on Form 442 requesting reinstatement of those frequencies. Licensee may not operate until the request for modification is approved.
- (6) The use of 902-928 MHz and 2.4 GHz will be allowed temporarily, with the justification that the UAS is operating autonomously for most operations.
- (7) For operations supporting the military within and between military ranges, the bands 225-390 MHz and 1370-1390 MHz should be used for both primary and backup UAS C2 with local DOD coordination.
- (8) Except for operations in compliance with Part 107 (without waivers) the bands 902-928 MHz and 2.4 GHz must only be used within restricted/warning areas until transition to properly allocated spectrum and licenses with adequate frequency protection is obtained.