

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

EXPERIMENTAL

(Nature of Service)

XC      FX

(Class of Station)

KA2XAG

(Call Sign)

0155-EX-TC-2019

(File Number)

NAME Raytheon Company

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) Tucson (PIMA), AZ - NL 32-06-06; WL 110-56-49

Frequency Information

Tucson (PIMA), AZ - NL 32-06-06; WL 110-56-49

| Frequency          | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|--------------------|---------------|---------------------|------------------|---------------------------|
| 138-225 MHz        | FX            | 2M00P0N             | 28119 W (ERP)    |                           |
| 410.1-2000 MHz     | FX            | 2M00P0N             | 28119 W (ERP)    |                           |
| 410.1-414.9875 MHz | FX            | 2M00P0N             | 28119 W (ERP)    |                           |
| 415.0125-968 MHz   | FX            | 2M00P0N             | 28119 W (ERP)    |                           |

This authorization effective January 22, 2020 and  
will expire 3:00 A.M. EST May 01, 2021

**FEDERAL  
COMMUNICATIONS  
COMMISSION**



## Frequency Information

Tucson (PIMA), AZ - NL 32-06-06; WL 110-56-49

| Frequency       | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|-----------------|---------------|---------------------|------------------|---------------------------|
| 1216-1240 MHz   | FX            | 2M00P0N             | 28119 W (ERP)    |                           |
| 1350-1558 MHz   | FX            | 2M00P0N             | 28119 W (ERP)    |                           |
| 1618-1660.5 MHz | FX            | 2M00P0N             | 28119 W (ERP)    |                           |
| 1668.4-2000 MHz | FX            | 2M00P0N             | 28119 W (ERP)    |                           |
| 2000-4000 MHz   | FX            | 2M00P0N             | 66222 W (ERP)    |                           |
| 4000-8000 MHz   | FX            | 2M00P0N             | 36392 W (ERP)    |                           |
| 8000-12000 MHz  | FX            | 2M00P0N             | 58884 W (ERP)    |                           |
| 12000-18000 MHz | FX            | 2M00P0N             | 62517 W (ERP)    |                           |
| 32000-39000 MHz | FX            | 2M00P0N             | 2884 W (ERP)     |                           |

## Special Conditions:

- (1) Operation requires consent of affected Educational Broadband Service/Broadband Radio Service (EBS/BRS) licensees.

**Special Conditions:**

- (2) Operation is subject to prior coordination with the Associated Public Safety Communications Officers, Inc. (APCO); ATTN: Director of Frequency Coordination; 351 North Williamson Blvd.; Daytona Beach, FL 32114-1112; Telephone: (386) 322-2500.
- (3) 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).
- (4) 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.
- (5) License POC certifies that the Governor-appointed FirstNet Single Point of Contact within the proposed Band 14 authorization location will be notified (contact information is available at [www.firstnet.gov/consultation](http://www.firstnet.gov/consultation)).
- (6) Licensee agrees that this license may be subject to further review by the FCC and possible re-coordination with FirstNet.
- (7) The station identification requirements of Section 5.115 of the Commission's Rules are waived.
- (8) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (9) This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to authorization with the Area Frequency Coordinator, Ft. Huachuca, AZ, 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 AFC, Ft. Huachuca, as necessary to ensure compatibility with existing uses.
- (10) Licensee is required to coordinate operations with existing microwave users in the area to avoid interference.
- (11) 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.
- (12) 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.
- (13) Operation is subject to prior coordination with the local Society of Broadcast Engineers, Inc. (SBE) frequency coordinator. Consult the list at [https://www.sbe.org/sections/freq\\_local.php](https://www.sbe.org/sections/freq_local.php) to find the appropriate coordinator.
- (14) This authorization is issued for the express purpose of conducting experimental operations described in the related application and required by U.S. Navy Contract number: N00019-17-C-0034. 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.
- (15) Stop buzzer is Jim Ortega at (520) 794-0227 to terminate transmissions if interference occurs.

**Special Conditions:**

- (16) Assignment in frequency bands 960-1400, and 2000-18000 MHz was coordinated prior to authorization with the FAA Western Coordinator, Los Angeles, CA. Use of frequencies under the authority of this assignment is subject to such further coordination with the FAA Western Coordinator, Los Angeles, CA, as necessary to ensure compatibility with existing uses.
- (17) The transmission is LIMITED to antenna height of no more than 10 ft AGL, and the direction of 237 degrees referenced to True North and at 70 nsec per pulse.
- (18) Subject to coordination with the Area Frequency Coordinator, located at the Army Electronic Proving Ground, Ft. Huachuca, Arizona, prior to use within the State of Arizona. Phone: 520-538-6423.
- (19) Successfully secure consents from the existing and future Advanced Wireless Service (AWS) licensees.
- (20) Maintain separation from the grandfathered earth stations as defined in Part 90, sub-part Z, or coordinate and agreement with the grandfathered earth station licensees prior to operation in 3650-3700 MHz.
- (21) Ensure that the operation will not cause harmful interference to any existing registered stations in the 3650-3700 MHz, and notify the registered users in the proposed area.
- (22) Operations in the following bands are prohibited:
  - 2690-2700 MHz
  - 2887-2893 MHz
  - 3952-3961 MHz
  - 4990-5000 MHz
  - 10680-10700 MHz
  - 15350-15400 MHz