

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

EXPERIMENTAL

(Nature of Service)

WL2XLB

(Call Sign)

XD FX

(Class of Station)

0108-EX-CN-2020

(File Number)

NAME Raytheon Company (Missiles and Defense - M)

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) Tucson (PIMA), AZ - NL 32-06-15; WL 110-57-13

Frequency Information

Tucson (PIMA), AZ - NL 32-06-15; WL 110-57-13

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
200-220 MHz	FX	NON	200 mW (ERP)	
230 MHz	FX	NON	200 mW (ERP)	
240 MHz	FX	NON	200 mW (ERP)	
250 MHz	FX	NON	200 mW (ERP)	

This authorization effective June 11, 2021 and
will expire 3:00 A.M. EST January 01, 2023

**FEDERAL
COMMUNICATIONS
COMMISSION**



Frequency Information

Tucson (PIMA), AZ - NL 32-06-15; WL 110-57-13

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
260 MHz	FX	N0N	200 mW (ERP)	
270 MHz	FX	N0N	200 mW (ERP)	
280 MHz	FX	N0N	200 mW (ERP)	
290 MHz	FX	N0N	200 mW (ERP)	
300 MHz	FX	N0N	200 mW (ERP)	
310 MHz	FX	N0N	200 mW (ERP)	
320 MHz	FX	N0N	200 mW (ERP)	
330 MHz	FX	N0N	200 mW (ERP)	
340 MHz	FX	N0N	200 mW (ERP)	
350 MHz	FX	N0N	200 mW (ERP)	

Frequency Information

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Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
360 MHz	FX	N0N	200 mW (ERP)	
370 MHz	FX	N0N	200 mW (ERP)	
380 MHz	FX	N0N	200 mW (ERP)	
390 MHz	FX	N0N	200 mW (ERP)	
400-406 MHz	FX	N0N	200 mW (ERP)	
406.1-1400 MHz	FX	N0N	200 mW (ERP)	
1427-1660.5 MHz	FX	N0N	200 mW (ERP)	
1668.4-2000 MHz	FX	N0N	200 mW (ERP)	
2000-2690 MHz	FX	N0N	5 W (ERP)	
2700-2887 MHz	FX	N0N	5 W (ERP)	

Frequency Information

Tucson (PIMA), AZ - NL 32-06-15; WL 110-57-13

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2893-4990 MHz	FX	N0N	5 W (ERP)	
5000-5040 MHz	FX	N0N	5 W (ERP)	
5050-10680 MHz	FX	N0N	5 W (ERP)	
10700-15350 MHz	FX	N0N	5 W (ERP)	
15400-18000 MHz	FX	N0N	5 W (ERP)	

Special Conditions:

- (1) 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).
- (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) 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.
- (4) Licensee agrees that this license may be subject to further review by the FCC and possible re-coordination with FirstNet.
- (5) 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.
- (6) 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.

Special Conditions:

- (7) 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.
- (8) 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.
- (9) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (10) Licensee is required to coordinate operations with existing microwave users in the area to avoid interference.
- (11) Operation is subject to prior coordination with affected Educational Broadband Service/Broadband Radio Service (EBS/BRS) licensees.
- (12) Operation is subject to prior coordination with the local Society of Broadcast Engineers, Inc. (SBE) frequency coordinator. Consult the list at <http://sbe.org/wp-content/uploads/freqcoor.pdf> to find the appropriate coordinator.
- (13) Raytheon Company (Missiles and Defense - M) must notch out the following (+/- 4 MHz) 4455 MHz.
- (14) Raytheon Company (Missiles and Defense - M) must coordinate with the Navy POC at (520) 794-4218 at least 24 hours prior to testing.
- (15) Raytheon Company (Missiles and Defense - M) must coordinate with Mr. Dan Mertly, nrao-rfi@nrao.edu, or (575) 835-7128 for any bands covered under Footnote US342.
- (16) Raytheon Company (Missiles and Defense - M) must ensure that the use of 5091-5150 MHz is in compliance with WRC-15 Resolution 418 limits.
- (17) Raytheon Company (Missiles and Defense - M) must limit all operations to 30mW CW transmissions, not to exceed 3.2 milliseconds in duration per frequency step, with transmission steps no less than 10 MHz increments, and a duty cycle not to exceed 1.2%. Testing shall be limited to 15 tests per day, with no single frequency used more than a total of 3 minutes each day.

Special Conditions:

- (18) Prior to commencing any operations in the frequencies below, the licensee must obtain consent from the following within 50 miles of the contours of the testing area:
- AMTS Licensee (217-218 MHz/219-220 MHz)
 - 218-219 MHz Service licensees
 - Paging Service licensees in 454 MHz/459 MHz
 - General Aviation Air-Ground Service in 454 MHz/459 MHz
 - 700 MHz Lower Band licensees (698-746 MHz)
 - 700 MHz Upper Band licensees (746-758 MHz and 775-788 MHz)
 - SMR licensees (809-824 MHz/854-869 MHz)
 - B/ILT 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)
 - B/ILT licensees (896-901 MHz/935-940 MHz)
 - Narrowband PCS licensees (901-902/930-931/940-941 MHz)
 - Location & Monitoring Service licensees (902-928 MHz)
 - Paging Service licensees in 929 MHz and 931 MHz
 - 1390-92 MHz Band Licensees
 - 1392-1395 MHz/1432-1435 MHz Band licensees
 - 1670-1675 MHz Band licensee (Crown Castle International), and the lessee (One Dot Six Corp)
 - Broadband PCS licensees (1850-1910 MHz/1930-1990 MHz)
 - 1910-1915 MHz/1990-1995 MHz Bands licensee
 - WCS (2305-2320 MHz/2345-2360 MHz) licensee (AT&T)
- (19) With respect to operations in the 3700-4200 MHz band, the licensee should be made aware that they must avoid causing interference to the existing Fixed Service operators and FSS earth stations in the band. For applicant's reference, a list of registered incumbent FSS earth stations in the band can be found at the following link: <https://docs.fcc.gov/public/attachments/DA-20-823A2.xls>
- (20) The designated point-of-contact to terminate transmissions if interference occurs is Jim Ortega at (520) 794-0227.
- (21) Operation is not permitted the following bands:
- 406-406.1 MHz
 - 1400-1427 MHz
 - 1660.5-1668.4 MHz
 - 2690-2700 MHz
 - 2887-2893 MHz
 - 3550-3700 MHz
 - 4990-5000 MHz
 - 5040-5050 MHz
 - 10680-10700 MHz
 - 15350-15400 MHz