

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

EXPERIMENTAL

(Nature of Service)

XC      FX

(Class of Station)

WH2XJA

(Call Sign)

0455-EX-CR-2018

(File Number)

NAME Raytheon Missile Systems

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 32-06-23; WL 110-56-48

Frequency Information

Tucson (PIMA), AZ - NL 32-06-23; WL 110-56-48

| Frequency   | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|-------------|---------------|---------------------|------------------|---------------------------|
| 14-218 kHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 224-241 kHz | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 249-334 kHz | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 340-392 kHz | FX            | 200HP0N             | 13 W (ERP)       |                           |

This authorization effective October 01, 2018 and  
will expire 3:00 A.M. EST October 01, 2020

**FEDERAL  
COMMUNICATIONS  
COMMISSION**



## Frequency Information

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| Frequency       | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|-----------------|---------------|---------------------|------------------|---------------------------|
| 396-2850 kHz    | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 3.025-3.4 MHz   | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 3.5-4.65 MHz    | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 4.7-4.995 MHz   | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 5.005-5.45 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 5.68-6.525 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 6.685-8.815 MHz | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 8.965-9.995 MHz | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 10.1-11.275 MHz | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 11.4-13.26 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |

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|-------------------|---------------|---------------------|------------------|---------------------------|
| 13.36-14.995 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 15.505-17.9 MHz   | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 17.97-19.995 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 20.005-21.924 MHz | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 22-24.995 MHz     | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 25.005-74.6 MHz   | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 75.4-108 MHz      | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 137-162.3125 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 981-1014 MHz      | FX            | 200HP0N             | 1 W (ERP)        |                           |
| 1016-1026 MHz     | FX            | 200HP0N             | 1 W (ERP)        |                           |

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|---------------|---------------|---------------------|------------------|---------------------------|
| 1034-1077 MHz | FX            | 200HP0N             | 1 W (ERP)        |                           |
| 1079-1086 MHz | FX            | 200HP0N             | 1 W (ERP)        |                           |
| 1104-1130 MHz | FX            | 200HP0N             | 1 W (ERP)        |                           |
| 1132-1146 MHz | FX            | 200HP0N             | 1 W (ERP)        |                           |
| 1148-1193 MHz | FX            | 200HP0N             | 1 W (ERP)        |                           |
| 1195-1209 MHz | FX            | 200HP0N             | 1 W (ERP)        |                           |
| 1211-1213 MHz | FX            | 200HP0N             | 1 W (ERP)        |                           |
| 1215-1390 MHz | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 1610-2000 MHz | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 2728-2747 MHz | FX            | 200HP0N             | 330 W (ERP)      |                           |

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| Frequency      | Station Class | Emission Designator | Authorized Power | Frequency Tolerance (+/-) |
|----------------|---------------|---------------------|------------------|---------------------------|
| 2753-4000 MHz  | FX            | 200HP0N             | 330 W (ERP)      |                           |
| 4000-4200 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 7235-8123 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 8143-8290 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 8310-8355 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 8375-9000 MHz  | FX            | 200HP0N             | 13 W (ERP)       |                           |
| 9200-40000 MHz | FX            | 200HP0N             | 13 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 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.
- (2) Operation in the 1850-1910 or 1930-1990 MHz band requires prior frequency coordination with 2 GHz microwave users and consent of PCS licensees to avoid interference.
- (3) 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.
- (4) Operation is subject to prior coordination with affected Educational Broadband Service/Broadband Radio Service (EBS/BRS) licensees.

**Special Conditions:**

- (5) Subject to prior coordination with FAA Western Regional Office, P.O. Box 92007, Worldway Center, Los Angeles, California 90009, Attn: Frequency Management Office. Phone 310-297-1872.
- (6) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (7) 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.
- (8) Licensee is required to coordinate operations with existing microwave users in the area to avoid interference.
- (9) Operation in the 1710-1755 or 2110-2155 MHz band requires consent of local Advanced Wireless Service (AWS) licensee(s) to avoid interference.
- (10) For 3650-3700 MHz band, Raytheon shall maintain separation from the grandfathered satellite earth station as defined in Part 90 Subpart Z, or coordinate and agreement with the grandfathered earth station licensees. In addition, Raytheon must notify the registered stations in the 3650-3700 MHz band.
- (11) The designated point-of-contact to terminate transmissions if interference occurs is Mr. Ernest Gossmann at (520) 794-0227.
- (12) This authorization is issued for the express purpose of conducting experimental operations described in the related application and required by the U.S. Government; contract numbers HQ0276-13-C-0001, N68936-13-D-0004, and N00024-12-C-5401. 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.
- (13) FirstNet can request the FCC to order the licensee to cease operations within 24 hours.
- (14) Operations subject to be consented by ALL PCS licensees within 25 miles of the location.
- (15) Operation subject to notification of 1670-75 MHz licensees serving the test area.
- (16) Operation is limited to indoor use only.
- (17) Operations subject to prior coordination and consent of Satellite Digital Audio Radio Service (SDARS) licensee(s) within 25 miles of the location.
- (18) OPERATION IS PROHIBITED IN 2000-2722 MHZ AND 4400-7215 MHZ BANDS.