

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

EXPERIMENTAL

(Nature of Service)

WF2XTD

(Call Sign)

XC FX

(Class of Station)

0190-EX-RR-2013

(File Number)

NAME RAYTHEON SAS

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(b) of the Commission's Rules

Station Locations

- (1) El Segundo (LOS ANGELES), CA - NL 33-55-44; WL 118-23-20
- (2) El Segundo (LOS ANGELES), CA - NL 33-55-47; WL 118-23-34

Frequency Information

El Segundo (LOS ANGELES), CA - NL 33-55-44; WL 118-23-20

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
8500-9000 MHz	FX	N0N	8 W (ERP)	
10700-12400 MHz	FX	N0N	8 W (ERP)	
15400-15700 MHz	FX	N0N	16 W (ERP)	
16200-18000 MHz	FX	N0N	16 W (ERP)	

This authorization effective August 03, 2013 and
will expire 3:00 A.M. EST August 03, 2015

**FEDERAL
COMMUNICATIONS
COMMISSION**

Frequency Information

El Segundo (LOS ANGELES), CA - NL 33-55-44; WL 118-23-20

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
18000-23600 MHz	FX	N0N	2 W (ERP)	
31800-40000 MHz	FX	N0N	5 W (ERP)	
40000-51400 MHz	FX	N0N	1 mW (ERP)	
54250-60000 MHz	FX	N0N	1 mW (ERP)	

El Segundo (LOS ANGELES), CA - NL 33-55-47; WL 118-23-34

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
100-108 MHz	FX	N0N	6.3 mW (ERP)	
138-144 MHz	FX	N0N	6.3 mW (ERP)	
148-328.6 MHz	FX	N0N	6.3 mW (ERP)	
335.4-406 MHz	FX	N0N	6.3 mW (ERP)	
410-500 MHz	FX	N0N	6.3 mW (ERP)	

Frequency Information

El Segundo (LOS ANGELES), CA - NL 33-55-47; WL 118-23-34

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
500-608 MHz	FX	N0N	8.2 mW (ERP)	
614-960 MHz	FX	N0N	8.2 mW (ERP)	
1427-1544 MHz	FX	N0N	8.2 mW (ERP)	
1545-1559 MHz	FX	N0N	8.2 mW (ERP)	
1610-1645.5 MHz	FX	N0N	8.2 mW (ERP)	
1646.5-1660.5 MHz	FX	N0N	8.2 mW (ERP)	
1710-2000 MHz	FX	N0N	8.2 mW (ERP)	
4400-4990 MHz	FX	N0N	63.1 mW (ERP)	
8500-9000 MHz	FX	N0N	295 mW (ERP)	
10700-12400 MHz	FX	N0N	295 mW (ERP)	

Frequency Information

El Segundo (LOS ANGELES), CA - NL 33-55-47; WL 118-23-34

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
15400-15700 MHz	FX	N0N	295 mW (ERP)	
16200-23600 MHz	FX	N0N	295 mW (ERP)	
24000-31300 MHz	FX	N0N	295 mW (ERP)	
31800-51400 MHz	FX	N0N	295 mW (ERP)	
54250-60000 MHz	FX	N0N	295 mW (ERP)	

Special Conditions:

- (1) 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.
- (2) The station identification requirements of Section 5.115 of the Commission's Rules are waived.
- (3) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (4) Operation is subject to prior coordination with affected existing Fixed Microwave Service licensees in accordance with 47 CFR, Part 101.103(d).
- (5) Licensee need to secure consent from the Advance Wireless Services licensees prior to operation on 1710-2000 MHz band.
- (6) This authorization is issued for the express purpose of conducting experimental operations described in the related application and required by government contract numbers N00019-05-G-0008 & N68936-05-D-0033. 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.

Special Conditions:

- (7) The Military Assignment Group, (MAG) made some changes within the frequency band 335.40 - 460 MHz as requested from the applicant. Below is a list of frequencies band that were approved by MAG:
- 335.4250 - 386.075 MHz,
386.1375 - 386.225 MHz,
386.2875 - 395.000 MHz,
395.4000 - 396.075 MHz,
396.1375 - 396.225 MHz,
396.2875 - 399.000 MHz, and
399.5125 - 406.000 MHz.
- (8) NTIA objects to the use of the following frequencies (in GHz w/27 MHz bandwidth):
- 15.15875; 15.22375; 15.33375. 21.4250; 21.6250; 22.6250; 22.8250; 23.3750
- (9) Raytheon should be aware that government handheld radios operate in Long Beach, CA. Special attention should be given to avoid causing interference to the following frequencies:
- 318 MHz; 342 MHz; 413.200 MHz; 413.225 MHz; 413.250 MHz; 413.275 MHz;
413.300 MHz; 413.325 MHz; 413.350 MHz; 413.375 MHz; 413.400 MHz
- (10) Due to low power TV bands below 2 GHz, operation is subject to prior coordination with the Society of Broadcast Engineers, Inc. (SBE); ATTN: Executive Director; 9247 North Meridian Street, Suite 305; Indianapolis, IN 46260; telephone, (866) 632-4222; FAX, (317) 846-9120; e-mail, executivedir@sbe.org; information, www.sbe.org.
- (11) Scheduling required for each usage with Western Area Frequency Coordinator, Tel: (805) 989-1003 or (805) 989-7985, prior to EDWARDS AFB and CHINA LAKE, CA operations.