

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

EXPERIMENTAL

(Nature of Service)

XC FX

(Class of Station)

WD2XZE

(Call Sign)

0196-EX-RR-2009

(File Number)

NAME RAYTHEON Electronics 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(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	NON	8 W (ERP)	
9200-10680 MHz	FX	NON	8 W (ERP)	
10700-12400 MHz	FX	NON	8 W (ERP)	
12400-15350 MHz	FX	NON	16 W (ERP)	

This authorization effective November 01, 2009 and
will expire 3:00 A.M. EST February 01, 2011

**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 (+/-)
15400-15700 MHz	FX	N0N	16 W (ERP)	
16200-18000 MHz	FX	N0N	16 W (ERP)	
18000-23600 MHz	FX	N0N	2 W (ERP)	
24000-26500 MHz	FX	N0N	2 W (ERP)	
26500-31300 MHz	FX	N0N	5 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)	

Frequency Information

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

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
138-144 MHz	FX	N0N	6.3 mW (ERP)	
148-328.6 MHz	FX	N0N	6.3 mW (ERP)	
410-500 MHz	FX	N0N	6.3 mW (ERP)	
500-608 MHz	FX	N0N	8.2 mW (ERP)	
614-960 MHz	FX	N0N	8.2 mW (ERP)	
1215-1340 MHz	FX	N0N	8.2 mW (ERP)	
1350-1400 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)	

Frequency Information

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

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1646.5-1660.5 MHz	FX	N0N	8.2 mW (ERP)	
1710-2000 MHz	FX	N0N	8.2 mW (ERP)	
2000-2690 MHz	FX	N0N	63.1 mW (ERP)	
2900-4200 MHz	FX	N0N	63.1 mW (ERP)	
4400-4990 MHz	FX	N0N	63.1 mW (ERP)	
5190-6000 MHz	FX	N0N	63.1 mW (ERP)	
6000-8000 MHz	FX	N0N	162 mW (ERP)	
8500-9000 MHz	FX	N0N	295 mW (ERP)	
9200-10680 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 (+/-)
12400-15350 MHz	FX	N0N	295 mW (ERP)	
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) Operation on frequency assignments in one of the bands 1435-1535 or 2310-2390 MHz was coordinated prior to authorization with the Western Area Frequency Coordinator (WAFC), Point Mugu, CA, 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 WAFC as necessary to ensure compatibility with existing uses.
- (2) 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.
- (3) The station identification requirements of Section 5.115 of the Commission's Rules are waived.
- (4) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (5) 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.

Special Conditions:

- (6) No transmissions are permitted on the following maritime and aviation distress frequencies (in MHz w/100 kHz bandwidth):
- 156.8 MHz
243 MHz
- (7) NTIA objects to the use of the following frequency (in MHz w/6 kHz bandwidth):
- 345 MHz
- (8) NTIA objects to the use of the following frequency (in GHz w/27 MHz bandwidth):
- 10.525 GHz
- (9) NTIA objects to the use of the following frequencies (in MHz w/6 kHz bandwidth):
- 239; 239.3; 243.0; 254.3; 255.4; 257.6; 257.8; 269.0; 271.0; 277.4; 282.6; 291.75; 298.85; 307.1; 317.5; 322.4; 323.225; 327.0; 343.625; 348.6; 351.7; 351.8; 354.1; 360.7; 363.2; 369.9; 377.2; 379.1; 381.6; 385.4
- (10) 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
- (11) 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
- (12) 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.

Special Conditions:

- (13) Operation is subject to prior coordination with fixed microwave service (Part 101) licensees in the following bands:

1.8-2.0 GHz
2.4-2.5 GHz
10.5-10.7 GHz
10.7-11.7 GHz
12.2-12.75 GHz
17.7-18.3 GHz
19.3-19.7 GHz
21.2-21.4 GHz
22.55-23.6 GHz
24.25-24.45 GHz
25.05-25.25 GHz
27.5-29.5 GHz
31-31.3 GHz
37-37.5 GHz
37.5-38.6 GHz
42-42.5 GHz

- (14) 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.
- (15) 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 N00019-99-C-1226. 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.
- (16) 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 number N00019-09-C-0003. 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.