

## 1: Purpose of Operation

The Purpose of the frequency authorization is for ground based testing of the X-Net Radio. Raytheon Intelligence &Space (RIS) would like to request available frequency bands in the range of 225 – 360 MHz, 360 – 512 MHz, 1250 – 1722 MHz and 1722 – 2500 MHz.

## 2: Technical Synopsis:

Spectrum needed:

225 – 360 MHz  
360 – 512 MHz  
1.250 – 1.722 GHz  
1.722 – 2500 GHz

**Exclude the Following AFTRCC Frequency Bands:**

**1435 – 1525 MHz**  
**2310 – 2320 MHz**  
**2345 – 2390 MHz**

### Equipment:

Manufacturer: Antenna Products  
Model Number: WB5600S  
Antenna Gain: 2 dBi

Antenna Products  
WB-1048M  
1 dBi / 7 dBi

Hascell-Denke  
MPDP700X4AB  
2.5 dBi

### Hascell-Denke

Model Number: MPDP100X25  
Antenna Gain: 0 dBi / -5 dBi

Antenna Polarization: Vertical  
Antenna Horizontal Plane: Omnidirectional

### Power levels requested:

*Frequency: 225 – 360 MHz*  
Output Power: 5W/37dBm  
ERP 1: 29.49 dBm  
ERP 2: 35.51 dBm  
ERP 3: 29.51 dBm

*Frequency: 360 – 512 MHz*  
Output Power: 5W/37dBm  
ERP 1: 33.67 dBm  
ERP 2: 41.38 dBm  
ERP 3: 34.38 dBm

*Frequency 1250 – 1722 MHz*  
Output Power: 3.2W/35dBm  
ERP 1: 16.48 dBm  
ERP 2: 33.61 dBm

ERP 3: 34.11 dBm

*Frequency 1722 – 2500 MHz*

Output Power: 3.2W/35dBm

ERP 1: 12.42 dBm

ERP 2: 33.31 dBm

ERP 3: 33.81 dBm

Modulation: Phase Modulation

Occupied Bandwidth: 1.2 MHz

Type of Signal: Data Communications

Type of Information: Video, Position Reporting, Control Information

**Location of use:**

*City: Fullerton, CA (Orange County) 33°53'47"N 117°57'18"W*

*Hours of Operation: 8:00 AM – 2:00 PM*

*Length of Daily Transmission: 4 hours a day.*

*Site Above Mean Sea Level: 100 Meters*

*Antenna Feed Point Height: 2 Meters*

*Distance to Nearest Aircraft Landing Area: 5 Kilometers*

*Radius: 20 Km*

**Stop buzzer contact:**

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**File Number:**

Class of Station: Fixed/Mobile

Station Location: Fixed/Mobile

Effective Date: 09/10/2021

Expiration Date: 09/230/2021

**3: Experimental Explanation:**

Test the performance of the X-Net radio in Fullerton, CA