

Raytheon Technologies Request for FCC Experimental License

- File No: 2041-EX-ST-2022
- Confirmation No: EL871659

Applicant Name (Company): Raytheon Technologies

1001 Boston Post RD

Marlborough, MA 01752

Date: 12/13/2022

Purpose of Operation: Raytheon Company is requesting for a Special Temporary Authorization in the 9.50 – 9.60 GHz range to test compliance of performance requirements in a relevant environment. This test and demonstration is essential to keeping costs low for this technology development effort. This application is a renewal request to an expired license WJ2XRM which is outside of the renewal window.

Raytheon Technical Point of Contact:

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Raytheon Spectrum Manager filing application

Azuka Anuniru

Spectrum Management Manager

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Email: Azuka.Anuniru@raytheon.com

FRN: 0003628344

Period of Use:

Start Date: January 2nd, 2023

Stop Date: June 30th, 2023

Equipment Information:

Transmitter Info: SSDLE
Manufacturer: Raytheon Company
Number of units: 1
Experimental: No

Antenna Information:

Manufacturer: Ball Aerospace and Technologies Corporation
Model: DLA
No of Units: 1
Experimental: N
Dimensions: Antenna is cone shaped. It is 8.75 inches in height and 10.75 inches in diameter

For Each Frequency band:

RF Output at the transmitter terminals: **137.20 W**

List each type of emission separately for each frequency (basically list the emission designators)

6M00M1D – BIT signal

Necessary bandwidth: **6 MHz**

Type of modulation (M): **pulse position**

Nature of signal(s) modulating the main carrier (1): **a single channel containing quantized or Digital information without the use of a modulating sub-carrier, excluding time-division multiplex**

Type of information transmitted (D): **Data**

List as appropriate for the type of modulation:

Pulse position modulation

Effective radiated power from the antenna (If pulsed emission, specify peak power): **457.33 W ERP, Peak**

Frequency Tolerance: **0.001%**

Necessary Bandwidth: Explain how it is determined:

The Necessary bandwidth was calculated, and emission designator is below. It represents the 20 dB bandwidth for each waveform type.

6M00M1D

Location:

The Raytheon facility in Pelham, NH, is located at 42° 44' 14"N, 71°21'16"W. The street address is 50 Bush Hill Rd Pelham, NH, 03076. The antenna testing will take place within 400 meters of these cited coordinates at a maximum ground elevation of 130 meters.

Is a directional Antenna (Other than the radar used): **Yes**

Width of beam in degrees at the half-power point: **90° Azimuth per quadrant, 20° Elevation**

Orientation in horizontal plane (degrees from True North): **360**

Orientation in vertical plane (degrees from horizontal): **+20° relative to horizon**

Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building: **No**

- a. Overall height above ground to tip of antenna in meters: **4**
- b. Elevation of ground at antenna site above mean sea level in meters: **130**
- c. Distance to nearest aircraft landing area in kilometers: **16.97**

Pepperell Airport – Pepperell, MA (UUU)	16.97km
Nashua Airport – Nashua, NH (OQU)	14.23km
Manchester Boston Regional Airport, NH (PVD)	22.47km

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft: **None**