Experimental License

1. **Purpose of Operation:**
   License needed to use RT-2059 radios for testing and experimentation purposes.

Technical Synopsis:

- Spectrum needed: 2.2 GHz – 2.5 GHz
- Power levels requested: ERP (peak) 24.3 Watts
- Location of use: Portsmouth, RI within 5 mile radius around 41º 34’ 5.52”, -71º 16’ 53.80”
- Direction of radiation: Omni-Directional
- Stop buzzer contact: Tom Milani 401-842-3592

2. **Explanation:**

This license will support upcoming Communications & Networking testing starting this fall. The RT-2059 radios are a major component of this testing.

3. **Test Summary:**

The test effort will demonstrate quality of service routing capabilities through multiple nodes (radios).

4. **RF Hazard Calculations and Site Safety Measures:**

RF Hazard calculations do not exceed 1 mW/cm^2 at the frequencies of test.

5. **Raytheon Technical Point of Contact:**

Name : Rachael Chandler
Postion : Systems Engineer
Phone: (508) 317 - 0105
Email: rachael.c.chandler@rtx.com

6. **Raytheon Spectrum Manager filing application:**

John Adams
Spectrum Management
Phone: 803-318-0021 (office phone)
Email: john.adams@raytheon.com

7. **Period of Use:**

Start date: October 1 2020
End date: April 1 2021

8. **Equipment Information:**

Indicate all equipment that will be involved in this operation.
RT-2059 Tactical Network Radio with 10 Watt Amplifier

9. Transmitter info:

Manufacturer: RSS Corp.
Model: RT-2059/U Dual Band Tactical Data Link P/N 224760, with 10 Watt Bi-Directional High Power Amplifier
Number of units: 4
Experimental (Y/N): Y

10. For each frequency band:

RF output at the transmitter terminals:
10 Watts peak

11. Effective radiated power from the antenna (if pulsed emission, specify peak power):

The effective radiated power from the antenna, including antenna transmit gain and front-end losses, is 24.3 W (peak power).

12. Frequency Tolerance:

+/- 10 ppm or 0.001%.

13. List each type of emission separately for each frequency (basically list the waveforms and emission designators)

14. **Emission Designator:** 1M27GXD, transmitted in 5 MHz channels

15. List as appropriate the type of modulation (and describe as necessary):

B- PSK and Q-PSK

16. Necessary bandwidth. Explain how determined.

Used formula in NTIA Manual, Annex J

17. Locations (street address, coordinates, ground elevation above sea level, and radius of operation)

Street Address: 1847 W. Main Rd. Portsmouth, RI 02871
Coordinates: 41º 34' 5.52", -71º 16' 53.80"
Ground Elevation: ~100ft. above sea level
Radius of Operation: 5 miles around coordinates

18. Is a directional antenna (other than radar used)?

No, an omni-directional antenna will be used.