

NARRATIVE STATEMENT

Pursuant to 47 C.F.R. § 5.3 and 47 C.F.R § 5.54 Echodyne Corp. hereby respectfully requests a two year experimental license commencing on Dec 20th, 2021 to operate in the 15.7-16.6 GHz radiolocation band to conduct testing of a new radar model developed by Echodyne Corp.

A. Purpose of Operation and Need for an Experimental License:

Echodyne Corp., headquartered in Kirkland, Washington, is developing innovative uses of radar by creating high performance ultra-low cost, size, weight, and power (“C-SWaP”) electronically scanning radars leveraging its Metamaterial Electronically Scanning Array (“MESA”) technology. Previous authorizations have enabled Echodyne to develop, test and license its EchoGuard (cUAS and ground security) and EchoFlight (detect and avoid) radars.

Under the experimental license requested in this application, Echodyne proposes to test its EchoShield Radar, which is an electronically scanned pulsed Doppler radar. The ground based testing will validate the performance of the radar in to support a range of use cases for detection of objects in the air and on the ground. Grant of the license will allow Echodyne to test and evaluate equipment and obtain immediate feedback to validate its initial units before it conducts further testing pursuant to a regular experimental license.

B. Location of Proposed Operation:

The radar will be operated at a fixed location within the following area:

Location	Coordinates (NAD83)	Radius of Operation
Kirkland, WA	47° 42' 32" N 122° 11' 16" W	5 km
Redmond, WA	47° 43' 45" N 122° 8' 53" W	5 km
Mt. Vernon, WA	48° 27' 23" N 122° 13' 3" W	10 km
Vantage, WA	47° 1' 39" N 119° 57' 52" W	10 km

C. Technical Specifications:

1. Frequencies Desired

Echodyne requests authorization to operate in the 15.7 - 16.6 GHz Band.

2. Effective Radiated Power

The units to be deployed are configured to operate at a peak maximum transmitter power output of 200.0W, and a peak maximum effective radiated power of 77.00kW. Echodyne will reduce the actual powers to the minimum power needed for successful operation, based on set-up and testing at the proposed locations. Operations will be conducted to comply with rules relating to human exposure to radiation.

3. Modulation and Emissions

The EchoShield radar operates using pulsed linear frequency modulation. The primary emission designator is 250MQ2N. The emissions will not extend beyond the frequency bands requested.

4. Antenna Information

The mobile base station radar transmitter antennas will not, under any circumstances, extend more than 6 meters above ground or a building. No antennas will be mounted in a fashion that will require approval under FAA and FCC rules and regulations.

5. Equipment To Be Used

Echodyne proposes to test its prototype EchoShield Radar. It expects that it will be able to conduct its testing with a maximum of 4 units.

D. Protection Against Causing Interference:

Echodyne has conducted a search of the Commission's Universal Licensing System ("ULS") database and determined that there are no licensed operations in the 15.7 – 16.6 GHz band within the state of Washington. In the event that it receives a complaint of harmful interference resulting from the proposed operation, Echodyne will take immediate action to address the interference, including if necessary discontinuing its operations. The company has designated Matt Ugarph, whose contact information is provided below, to act as the "stop buzzer" for this purpose.

During that period the proposed operations will be limited in scope. In summary, the analysis conducted by Echodyne indicates the proposed operation should not interfere with any licensed operation.

E. Restrictions on Operation:

Echodyne recognizes that the operation of any equipment under experimental authority must not cause harmful interference to authorized facilities. Should interference occur, Echodyne will take immediate steps to resolve the interference, including discontinuing operations if necessary. In addition, Echodyne will advise all personnel using the equipment that permission to operate has been granted under experimental authority issued to Echodyne,

that such operation is strictly temporary, and that the equipment may not cause harmful interference.

F. Public Interest:

Echodyne submits that issuance of a license as requested is in the public interest, convenience, and necessity. Grant of a license will permit Echodyne to develop innovative equipment that will enable enhanced security and situation awareness at a more accessible commercial price point.

G. Contact Information:

For questions about this application, please contact:

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For questions about the company or the testing, please contact:

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In the unlikely event interference concerns should arise during the period of authorization for this license, please contact the company's "Stop Buzzer" identified below:

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