Echodyne Corp.
Application for Experimental Special Temporary Authority
ELS File No. [____-EX-ST-2017]

NARRATIVE STATEMENT

Pursuant to Section 5.3(d) and (f) and Section 5.61 of the Federal Communications Commission's ("FCC") rules, 47 C.F.R. §§ 5.3(d), (f), 5.61, Echodyne Corp. hereby respectfully requests a special temporary authority ("STA") from October 4-31, 2017 to operate in the 24.45-24.65 GHz band to test a radar developed by Echodyne Corp.

Grant of authority to test at the proposed location will enhance the company's ability to demonstrate the capabilities of its radar technology and to test detect and avoid ("DAA") radar technology for small unmanned aerial vehicles and other aircraft.

In support of this request, the following is shown:

A. Purpose of Operation and Need for Experimental License:

Echodyne Corp., headquartered in Bellevue, Washington, is developing innovative uses of radar by creating high performance ultra-low cost, size, weight, and power electronically scanning radars. For example, its Metamaterial Electronically Scanning Array ("MESA") offers disruptive capabilities for existing radar applications and enables new categories of radars for UAVs, robots, autonomous vehicles, and security.

Under other authorizations, Echodyne has tested its MESA-DAA, which is an electronically scanning DAA radar for small UAVs and other aircraft. The testing has allowed Echodyne to evaluate the performance of the DAA radar in various settings. This requested STA is to enable additional product evaluation tests with commercial entities interested in Echodyne's technology.

B. Location of Proposed Operation:

Echodyne proposes to test the radar on a piloted fixed-wing aircraft to validate its performance for airborne uses. By this application, Echodyne seeks authority to conduct airborne tests at the following location:

Location	Coordinates (NAD83)	Radius of Operation
Phoenix, AZ	33° 29' 24" -112° 4' 19"	50 km, altitudes up to 2400m AGL

C. Technical Specifications:

1. Frequencies Desired

Echodyne requests authorization to operate in the 24.45-24.65 GHz band.

2. Effective Radiated Power

The units to be deployed are configured to operate at a peak maximum transmitter power output of 2W, and a peak maximum effective radiated power of 243W.

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

Echodyne proposes to operate using linear FM modulation. The primary emission designator is 190MF3N. Other emission modes may be utilized, but in no event will the emissions extend beyond the frequency bands requested.

4. Antenna Information

No antennas will be mounted in a fashion that will require approval under FAA and FCC rules and regulations. The mobile units on manned aircraft will operate at heights specified above under Section B.

5. Equipment To Be Used

Echodyne proposes to test its MESA-DAA radar. It expects that it will be able to conduct its testing with a maximum of 2 units.

D. Protection Against Causing Interference:

As noted above, Echodyne has requested authority to operate in the 24.45-24.65 GHz band. It has conducted a search of the Commission's Universal Licensing System ("ULS") database and determined that there are no licensed operations in that spectrum.

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 it operations. The company has designated Mr. Bill Graves, whose contact information is provided below, to act as the "stop buzzer" for this purpose.

Furthermore, the length of the test period is short, extending only from October 4-31, 2017. During that period, the proposed operations will be limited in scope. Echodyne will on average transmit for only 240 minutes over a period of 8 hours on not more than 5 days each week.

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 if necessary arranging for the discontinuance of operation.

In addition, Echodyne will advise entities 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. Entities will also be advised in accordance with Section 2.803 of the Commission's rules, 47 C.F.R. §2.803, that any unapproved devices have not been authorized as required by the rules of the FCC.

F. Public Interest:

Grant of an authorization will permit Echodyne to develop innovative radar equipment that will enhance public safety.

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 requested by this application, please contact the company's "Stop Buzzer" identified below:

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