



U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D. C. 20591

JUL - 3 2018

Mr. Axel Rodriguez
Chief, Equipment Authorization and Compliance Branch
Office of Engineering and Technology
Federal Communications Commission
7435 Oakland Mills Road
Columbia, MD 21046

Dear Mr. Rodriguez:

The Federal Aviation Administration (FAA), office of Spectrum Engineering Services was notified by letter dated September 27, 2017, that Echodyne intended to file an application for equipment certification of a Detect and Avoid (DAA) radar with the Federal Communications Commission (FCC). Specifically, the application refers to the Echodyne MESA-DAA radar, a small, lightweight electronically scanning airborne radar that provides detect and avoid capabilities for small unmanned aircraft. It operates in the frequency range 24.25-24.65 GHz. Echodyne requests certification for use under FCC ID # 2ANLB-MESADAA00051.

FCC rules require that transmitting equipment used in conjunction with the aviation services must be authorized in accordance with its equipment certification procedures. In addition to demonstrating compliance with all pertinent FCC technical requirements, in order to be authorized on the frequencies associated with the MESA-DAA radar, Echodyne is required by Section 87.147 of the FCC's rules to notify the FAA of its application for FCC certification. The FCC will not act on the certification application absent the receipt of a determination of no objection from the FAA.

The Spectrum Planning and International Team of the FAA has reviewed the information provided to us by Echodyne. The FAA office of Spectrum Engineering Services supports the FCC granting certification of this equipment and recommends that aircraft stations that employ the Echodyne MESA-DAA radar be licensed by rule in accordance with Section 87.18 of the FCC's rules. We acknowledge that an FCC grant of equipment certification only signifies compliance with the FCC's specific rules. However, we ask that any grant of FCC equipment certification include a condition that clearly indicates that the (1) FCC authorization does not signify FAA approval for use of this system as an airborne DAA radar and (2) directs users to the FAA for guidance and authorization as necessary prior to use of the Echodyne MESA-DAA radar in aircraft.

In light of ongoing standards developments that could potentially impact current and future use of the MESA-DAA radar, directing users to us for guidance will ensure continued compliance with FAA rules. By way of background:

1. Aviation is currently in the process of developing standards for unmanned aircraft Detect-and-Avoid (DAA) systems and the FAA has adopted standards for DAA systems intended for installation on large unmanned aircraft (see FAA Technical Standard Order C212).
2. The proposed Echodyne MESA-DAA radar is not capable of meeting the current requirements for a DAA system intended for installation on large unmanned aircraft.
3. Work is underway within RTCA Special Committee 228 to develop standards for DAA systems intended for installation on small unmanned aircraft and these standards should be completed within the next two years.
4. It is anticipated that the FAA will adopt the RTCA developed standards for DAA systems intended for installation on small unmanned aircraft once they are published.
5. It is anticipated that the Echodyne MESA-DAA radar will be capable of meeting the standards for DAA systems intended for installation on small unmanned aircraft that are being developed in RTCA.

Recognizing that new standards for DAA systems intended for installation on small unmanned aircraft are not yet available, the FAA office of Spectrum Engineering Services informs you that it will provide guidance to users of the equipment that FAA authorization may be necessary prior to its use based on the following:

1. That until standards for DAA systems intended for installation on small unmanned aircraft are adopted by the FAA or the FAA issues interim standards, operations of the Echodyne MESA-DAA radar are limited to installation on unmanned aircraft that:
 - a. weigh less than 55 pounds;
 - b. fly no more than 400 feet above the ground, within 400 feet radius of a structure that is higher than 400 feet, and not higher than 400 feet above the structures immediate uppermost limit;
 - c. have a ground speed that does not exceed 100 miles per hour;
 - d. do not operate within Class B, Class C, or Class D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport;
2. That the Echodyne MESA-DAA radar not be used to replace visual observers nor to extend unmanned aircraft operations beyond visual line of sight.
3. That changes could be made based on FAA issued interim standards.
4. That changes could be made once a low power DAA standard is developed.
5. That although analysis indicates compatibility is likely between the Echodyne MESA-DAA radar system and future standards compliant DAA systems, deployment of the Echodyne MESA-DAA radar system may affect the ability to use this band in the future for standards compliant DAA systems or may affect the conditions upon which standards-compliant DAA systems are approved.

We have informed Echodyne that, upon inquiry, the FAA will provide this guidance on the usage of its MESA-DAA radar system. It is our understanding that, in order to further ensure that the device will be operated in compliance with FAA requirements, Echodyne intends to incorporate similar guidance into any publicly-available information about the product (e.g., user operator manuals, websites, etc.).

If you require any additional information, please contact Mr. Ian Atkins, Group Manager, Spectrum Engineering Services Group, at (202) 267-7531 or Mr. Don Nellis, Electronics Engineer, Spectrum Planning and International Team, at (202) 267-9779 or via e-mail Donald.Nellis@faa.gov.

Sincerely,



Brian P. Peters
Acting Director
Operations Support

cc:
Andrea Radosevich <andrea@echodyne.com>