



Federal Aviation Administration
Office of Spectrum Policy and Management
ASR-1
800 Independence Ave. SW
Washington DC 20591

April 14, 2023

Dear Sirs:

Pursuant to 47 CFR §87.147(d), we are notifying you that Echodyne Corp. ("Echodyne") will be filing an application with the Federal Communications Commission for equipment certification of a ground-based radar operating in the 15.400 GHz to 15.700 GHz radionavigation band.

We hereby provide the information required by 47 CFR §87.147(d) as follows:

- 1. Equipment Description:** Echodyne's EchoShield is a Medium Range Radar (MRR) built upon Echodyne's MESA (Metamaterial Electronically Scanned Array) architecture enabling airspace management applications requiring longer detection ranges (3km and beyond) and greater accuracy. The radar has been designed to provide Ground-Based Detect and Avoid (GB-DAA) capability for airspace management and can be configured at specific sites to operate in the radionavigation band 15.400 – 15.700 GHz with 5 frequency channels. It is a Linear Frequency Modulated (LFM) Pulsed Doppler radar with a peak transmitter power of 160W. The radar is being certified under Part 87 of the FCC Rules. Echodyne is also requesting that the unit be certified under Part 90 of the FCC Rules to operate in the 15.700 – 16.600 GHz band for radiolocation applications.
- 2. Manufacturer's Identification:** The manufacturer's identification for the radar is FCC ID: 2ANLB-MESA00054.
- 3. Antenna Characteristics:** Dimensions: 42.5 cm x 33 cm x 18 cm

Polarization: Linear, Horizontal
Maximum field of regard: Azimuth $130^{\circ} \pm 65^{\circ}$, Elevation $90^{\circ} (+50^{\circ}/-40^{\circ})$
Gain: 27 dBi (max), Gain roll-off = 2 dB typ. over full field of regard. HP Beam width = 8.7° (AZ plane), 4.6° (EL plane) one-way. Side Lobe Level = -50 dB (RMS average) two-way.
- 4. Rated Output Power:** 79.0 dBm EIRP
- 5. Emission Type and Characteristics:** Q3N Pulse, carrier also angle-modulated during pulse with single analog channel.

6. Frequencies of Operation:

Channel	Frequency (GHz)								
	Center	BW: 25 MHz		BW: 50 MHz		BW: 100 MHz		BW: 200 MHz	
L1	15.450	15.438	15.463						
L2	15.500	15.488	15.513	15.475	15.525				
L3	15.550	15.538	15.563	15.525	15.575	15.500	15.600	15.4500	15.6500
L4	15.600	15.588	15.613	15.575	15.625				
L5	15.650	15.638	15.663						

7. Essential Receiver Characteristics: Not applicable, no protection required.

Best regards,

Signed by: Hanna Cox
Signature

Hanna Cox
Print name

Echodyne Corp.
Assistant General Counsel