

The Boeing Company
Global Spectrum Management
P.O. Box 3707 MC: 1K-105
Seattle, WA 98124-2207
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Why an Experimental License is Necessary:

An License is required to support VOR (VHF Omnidirectional Radio) antenna Range testing. The Antenna Range is an open air ground reflection antenna range used to test the operational characteristics of commercial aircraft full scale antennas or to validate aircraft antenna patterns using scale models. These tests are used to qualify new antennas or new aircraft configurations, verify manufacturing processes or evaluate repairs to damaged antennas. Antenna radiation pattern, directivity, gain, side lobes and f/b ratio are some of the parameters that can be measured. Boeing also sells antenna measurement services to non-Boeing and non-aviation related industries.

Operation Description:

The transmit antenna is a log-periodic dipole array (LPDA) mounted on a 40 foot tower adjacent to the building. The transmit antenna height can be varied from approximately 6 feet to 36 feet. Antennas or model aircraft are mounted on a 25 foot high antenna positioner located at a distance of 250 feet on a bearing of 143° true from the transmit antenna. An alternate antenna positioner location is at a distance 125 feet but requires the physical relocation of the antenna positioner to be used. Low level CW signals (-10 dBm) from calibrated laboratory grade synthesized RF sources are transmitted from the transmit antenna. The transmit antenna is raised or lowered to peak the received signal by matching the phase of the direct path and reflected path signals. The gain of the LPDA is approximately 10 dBi, so expected ERP is below the 4 mW request. The desired measurements are then taken. A partially wooded wetland extends an additional 1300 feet beyond the receive antenna tower.

Frequency Data	
Transmit	108.8, 113.025, and 117.925 MHz
Transmitter Data	
Transmitter Model	83620A
Transmitter Manufacturer	Agilent/Keysight
Power Output ERP	4 mW
Emission Data	
Emissions	N0N (CW)

Table 1 – Transmitter Data

Table (2) lists the locations/areas of operations, as well as the station class of the operation.

City	State	Latitude	Longitude	Radius (KM)	Station Type
Auburn	WA	47-16-32 N	122-14-27 W	N/A	Fixed/Ground

Table 2 – Location Data

Start Date: July 26th, 2020

Stop Date: July 26th, 2022

Stop Buzzer POC:

Stop Buzzer for this operation is Raymond Robinson at 206-766-5484.