

## **DESCRIPTION:**

### **Low Level Direct Drive (LLDD) Lightning Test**

This experimental license is required to conduct testing necessary to validate the lightning protection design on Boeing Aircraft. The test data will be scaled and transformed to obtain estimates of the peak voltage and current transients that can be expected on the aircraft systems.

The purpose of this experimental operation is to allow for testing in support of the FAA required aircraft Lightning Testing and Certification.

The tests to be conducted are low level, swept continuous wave tests on production aircraft/components. This type testing is conducted as a closed loop, non-intentional radiator. The aircraft and ground plane form a closed loop transmission line, however parasitic emissions may occur. The emission type is CW. At best, the test set up is a very inefficient antenna, particularly at the higher frequencies, above 10 MHz. Although we do not have any measured data on the actual emission level, **Boeing is currently licensed to conduct this same test in the Seattle area, and has ran it on numerous past occasions with no interference issues noted.**

In addition, this is a swept frequency test, using a single sweep and a limited dwell time, which should allow the test to be conducted without any interference.

## **TEST LOCATION:**

**Everett (SNOHOMISH), WA - NL 47-55-32; WL 122-16-25**

## **TEST PARAMETERS:**

**Equipment:** Vector- Network Analyzer.

**Frequency Band:** DC – 100MHz

**Test Frequencies:** 101 test points/decade

**Sweep Time:** 10 Seconds

**Max Dwell Time per Frequency:** 50 milliseconds

**Max ERP to Closed Loop Configuration:** 50 Watts (see note-1)

**Signal Type:** N0N

**Stop Buzzer:** The “Stop Buzzer” is Steven Henning, telephone (206)544-8386.

**Note-1:** *50 watts is the maximum input power into the closed loop configuration. It is anticipated that the actual parasitic (unintentional emission) will be well below 1 watt.*