

Technical Description

The Boeing Company

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JUSTIFICATION:

SATSIM test and setup

The Boeing Company is requesting a Special Temporary Authorization (STA) to support satellite antenna development. Boeing will conduct testing using a Ka Band Satellite simulator. The testing will be conducted in Hood River, OR, Boardman, OR, and Bingen, WA.

OBJECTIVE & TEST DESCRIPTION

The satellite simulator (transponder) will be used as a test bed to setup and operate satellite earth terminals under realistic operating conditions without the need for an actual satellite. The antenna and simulator will be pointed in a horizontal position to the ground and at no time be point toward the geostationary arc. The test requires two uplink frequencies and two downlink frequencies in Ka-band.

Figure 1 below illustrates the test setup, angles and relative positioning. Both ground terminals and satellite simulator (transponder) will be setup within a radius of 15 feet.

Start Date: 12/1/2020

Stop Date: 6/1/2021

Satellite Simulator (Transponder):

Manufacturer: Atlantic Microwave Ltd
Model: CST-MSS-130021-S5S5 (Ka-band)
Frequencies: 20.003 GHz
Emissions: 4M5G7D
ERP: 0.0005 W (500 μ W)
Station Class: FX

Satellite Simulator (Transponder):

Manufacturer: Atlantic Microwave Ltd
Model: CST-MSS-130021-S5S5 (Ka-band)
Frequencies: 20.008 GHz
Emissions: 600KG7D
ERP: 0.0005 W (500 μ W)
Station Class: FX

Technical Description

Terminal VSAT

Manufacturer: AvL Technologies
Model: 2.4 meter Ka Antenna System (Ground VSAT)
Frequencies: 29.808 GHz (Uplink)
Emissions: 600KG7D
ERP: 24.6 W
Station Class: FX

Manufacturer: AvL Technologies
Model: 2.4 meter Ka Antenna System (Ground VSAT)
Frequencies: 29.808 GHz (Uplink)
Emissions: 600KG7D
ERP: 1,288,000 W (1.28 MW)
Station Class: FX

Terminal GetSat

Manufacturer: GetSAT
Model: Ka MicroSAT Antenna System
Frequencies: 29.803 GHz (Uplink)
Emissions: 4M5G7D
ERP: 24,550 W
Station Class: FX

LOCATIONS:

Location: Bingen, WA
Lat/Lon: within 5 km, centered around NL 45-42-23; WL 121-27-02
Station Class: FX

Location: Boardman, OR
Lat/Lon: within 5 km, centered around NL 45-44-54; WL 119-47-38
Station Class: FX

Location: Hood River, OR
Lat/Lon: within 5 km, centered around NL 45-42-41; WL 121-31-11
Station Class: FX

STOP BUZZER POINT OF CONTACT:

Stop Buzzer for Operation: Insitu OAC: **1-509-637-4691**

Technical Description

Figure 1

