Coordination Data
X Terminals
Chandler Location

The following information has been filed with the FCC in the form of a Technical Brief document and is also summarized here in support of coordination.

I. GENERAL INFO

1. Is this for IR&D or Military/Government Sponsor Test/Demo

Yes.
This is for testing/certifying satellite earth terminals that will be procured by the US Military.

2. If it's for Military/Government Sponsor Test/Demo, provides the Government POC (Name, Office, Phone Number and Email Address and the objective/s of the Test/Demo

Government POC:

SOCOM
D. Jarrett Potts
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Acquisition Program Manager SDN
COMM: 813-826-7011
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Viasat, Avl, and Intellicom are performing satellite certification testing of terminals for use by the US government. As part of the certification testing, transmission to the WGS satellites is required. During the certification testing, the terminals will be owned and operated by commercial entities. While ARSTRAT provides authorization to access the WGS satellite, experimental licenses for transmission from the earth terminals are being sought.

3. Requires starting date and duration

A testing event usually occurs during a 2-4 week period.
Several testing events are expected during the next year from Jan 10, 2020 through Jan 30 2021.

Transmission events are coordinated with ARSTRAT WGS satellite operations. A Satellite Access Assignment (SAA) is provided by ARSTRAT.

II. SATELLITE DOWNLINK

1) GSO longitude of Satellite

From Chandler, Arizona Location

- WGS5 at 52.5W
- WGS6 at 135W

2) Main beam gain of the satellite downlink transmitting antenna in the requested band/s, the point on the earth where the peak of the beam be pointed, and the downlink gain contours relative to that point on the earth

The WGS satellites are configurable by ARSTRAT WGS satellite operations in beam diameter and location on the earth. This information is not available to earth terminal users. Following are our best estimates:

G=45 dBi
Beamwidth 1 degree
3 dB beam contour on earth 400 miles diameter

Beam center
- Chandler 33°21'06" N, 111°50'24" W

3) Maximum spectral power density (SPD) of any downlink carrier

-149 dBW/m^2/4kHz (X Band)

4) Center frequency and emission designator of any downlink carrier

X Band
7.25 to 7.75 GHz (to be assigned by the satellite operator/ARSTRAT)
2M0G7D
10M0G7D

5) If it is multiple carriers, provides all emissions designators and downlink EIRPs for each. If it is a single carrier, then how many of those single carriers can be operated into the same downlink beam simultaneously during the testing.

X Band
2M0G7D EIRP 41 dBW, only one of these carriers to be transmitted during testing
10M0G7D EIRP 37.2 dBW, only one of these carriers to be transmitted during testing

III. EARTH STATION UPLINK

1) Coordinates of earth station

Chandler 33°21'06" N, 111°50'24" W

2) Name and/or nomenclature of the terminal, if known/assigned

AVL/Viasat BAT-600 MMT
60 cm antenna

AVL Model 1315
135 cm antenna

3) Main beam gain of the transmitting earth station antennas to be used for the test and the off-axis antenna pattern expressed as one of the ITU patterns or measured data

The earth terminal is compliant with:

- ESD compliance with MIL-STD-188-164C for terminals with D/lambda <50

  4.5.1.2 ESD. For all ETs, ESD in the GSO plane shall not exceed the following:
  a. $ESD(\theta) = 2.351 - 25 \log_{10}\theta$ (dBW/Hz) for $2.0° \leq \theta < 3.8°$;
  b. $ESD(\theta) = -13.0$ (dBW/Hz) for $\theta = 3.8°$;
  c. $ESD(\theta) = 1.49 - 25 \log_{10}\theta$ (dBW/Hz) for $3.8° < \theta < 5.0°$;
  d. $ESD(\theta) = -3.97 - 25 \log_{10}\theta$ (dBW/Hz) for $5.0° \leq \theta < 6.94°$;
  e. $ESD(\theta) = -25.0$ (dBW/Hz) for $6.94° \leq \theta \leq 12.42°$;
  f. $ESD(\theta) = 2.35 - 25 \log_{10}\theta$ (dBW/Hz) for $12.42° < \theta < 48.0°$;
  g. $ESD(\theta) = -39.65$ (dBW/Hz) for $48° \leq \theta \leq 180°$;
  Where: θ = the off-axis angle in the direction of the GSO plane referred to the main-lobe axis
- Patterns are in a technical brief previously submitted to the FCC as part of this filing.

X Band
AVL/Viasat BAT-600 MMT
60 cm antenna
G=32.3 dBi

AVL Model 1315
135 cm antenna
G=39.0 dBi

4) Maximum spectral power density (SPD) of any uplink carrier

X Band
-13 dBW/Hz EIRP density

5) Center frequency and emission designator of any uplink carrier

X Band
7.25 to 7.75 GHz (to be assigned by the satellite operator/ARSTRAT)
2M0G7D
10M0G7D

6) If it is multiple carriers, provides all center frequencies and associated emissions designators and uplink EIRPs for each. If it is a single carrier, then how many of those single carriers can be operated into the same uplink beam simultaneously during the testing?

X Band
2M0G7D EIRP 43.3 dBW, only one of these carriers to be transmitted during testing
10M0G7D EIRP 56.6 dBW, only one of these carriers to be transmitted during testing