Exhibit A
Description of Request for Special Temporary Experimental Authority

As an antenna manufacturer, Viasat, Inc. ("Viasat") designs and produces a variety of fixed and aeronautical antennas supporting a wide variety of frequencies for both commercial and Government users.

Viasat requests special temporary experimental authority to conduct performance testing on its next generation dual band mobile antenna, KuKarray Gen 2, in the 30.0 – 31.0 GHz band. The first generation KuKarray, whose Ka aperture is the M40, has already been granted blanket authority[1] by the Commission to operate on Viasat satellites and experimental authority to operate on Viasat and other satellites.[2] The KuKarray Gen 2 and the Global Mantarray (the single band commercial Ka antenna version) has been granted blanket authority[3] by the Commission to operate on Viasat owned satellites.

Details of Testing

The performance testing will be over-the-air using Inmarsat's I5-F2 and F3 geostationary satellites located at 55° W.L. and 180° W.L., respectively. Previously, successful testing took place in 4 locations with the satellite beam centered on the test location under special temporary authority[4]. This current request is to support the second phase of testing which requires the antenna to be operated on the aircraft while in flight.

The test plan is to use I5's HCX cross-strap channel capability to route the Mil-Ka uplink test carrier from the aero-terminal into the gateway downlink which is in the commercial Ka-band. The Inmarsat ground station for this I5-F2 gateway link is located at their Lino, Lakes, MN teleport and the I5-F3 gateway is in Auckland, New Zealand. Figure 1 is the downlink commercial Ka-band frequency EIRP power contour plot for Lino Lakes, MN.

The tables below shows the emission designators, frequencies and power levels requested for this testing.

Test Case	Downlink Center Frequency [MHz]	Emission Designator	Polarity	Peak Downlink EIRP [dBW]	Peak Downlink EIRP Density [dBW/Hz]
1	20550	70M1M1D	LHCP or RHCP	57.6	**-20.85**
2	20300	70M1M1D	LHCP or RHCP	57.6	**-20.85**

Table 1 Forward Link Downlink in Mil-Ka Frequency Band to Terminal

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[1] *See* Viasat, Inc., File No. SES-LIC-20120427-00404, Call Sign E120075 (granted July 17, 2013).
[2] *See* Viasat, Inc. File No. 0015-EX-CM-2018, Call Sign WH2XTJ (granted February 26, 2018).
[3] *See* Viasat, Inc. File No. SES-LIC-20180123-00055, Call Sign E180006 (granted April 17, 2018).
[4] *See* Viasat, Inc. File No. 0451-EX-ST-2018, Call Sign WM9XMB (granted March 20, 2018).

Test Case	Uplink Center Frequency [MHz]	Emission Designator	Uplink Polarization	Uplink EIRP [dBW]	Uplink EIRP Density at bore-sight [dBW/Hz]
3(a)	30350	50M6M1D	RHCP	50.0	-27.0
3(b)	30350	50M6M1D	LHCP	50.0	-27.0
4(a)	30100	50M6M1D	RHCP	50.0	-27.0
4(b)	30100	50M6M1D	LHCP	50.0	-27.0

Table 2 Return Link Uplink in Mil-Ka Frequency Bad From Terminal

KuKarray Gen 2 Technical Information

The figures below show the measured transmit gain plots for co-pol, and cross-pol in the azimuth and elevation planes at a worst case skew angle of 90° and include radome in the measurement.

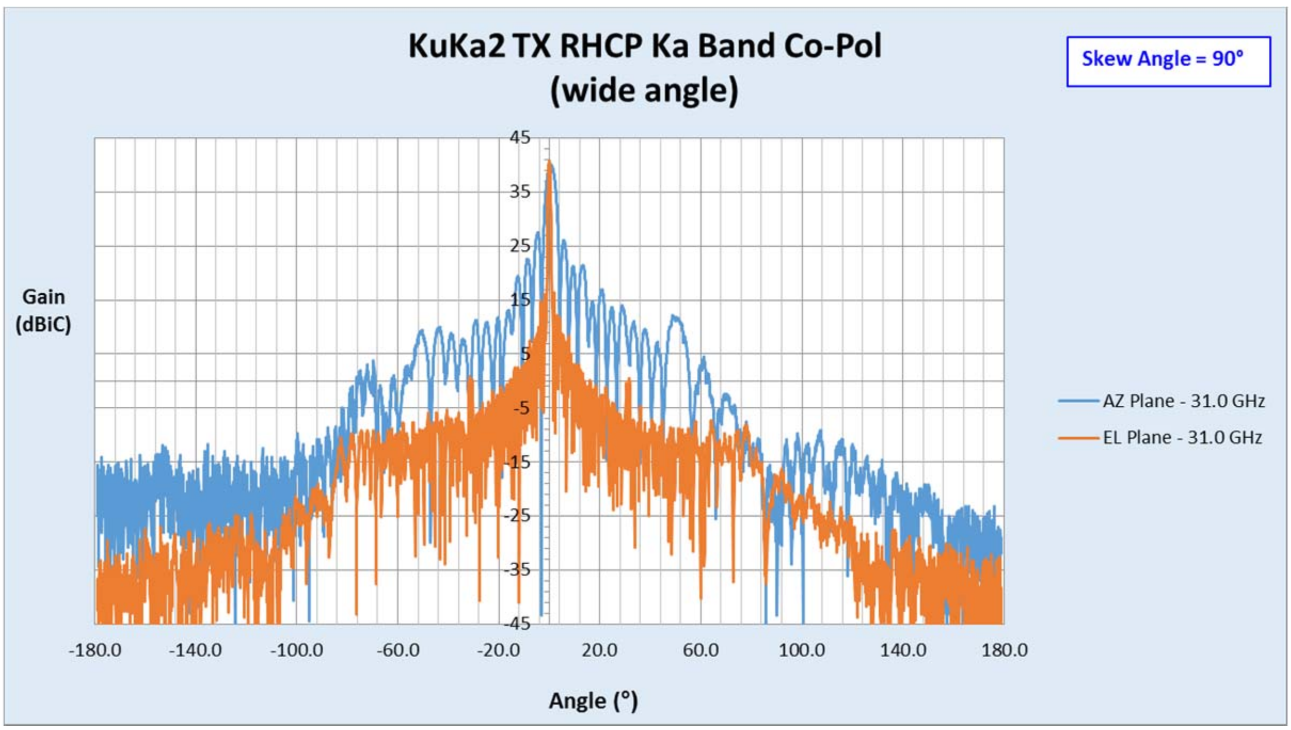

Figure 1: Measured RHCP Transmit Terminal Antenna wide pattern cuts for worst case Skew angle 90°. These patterns are measured with radome.

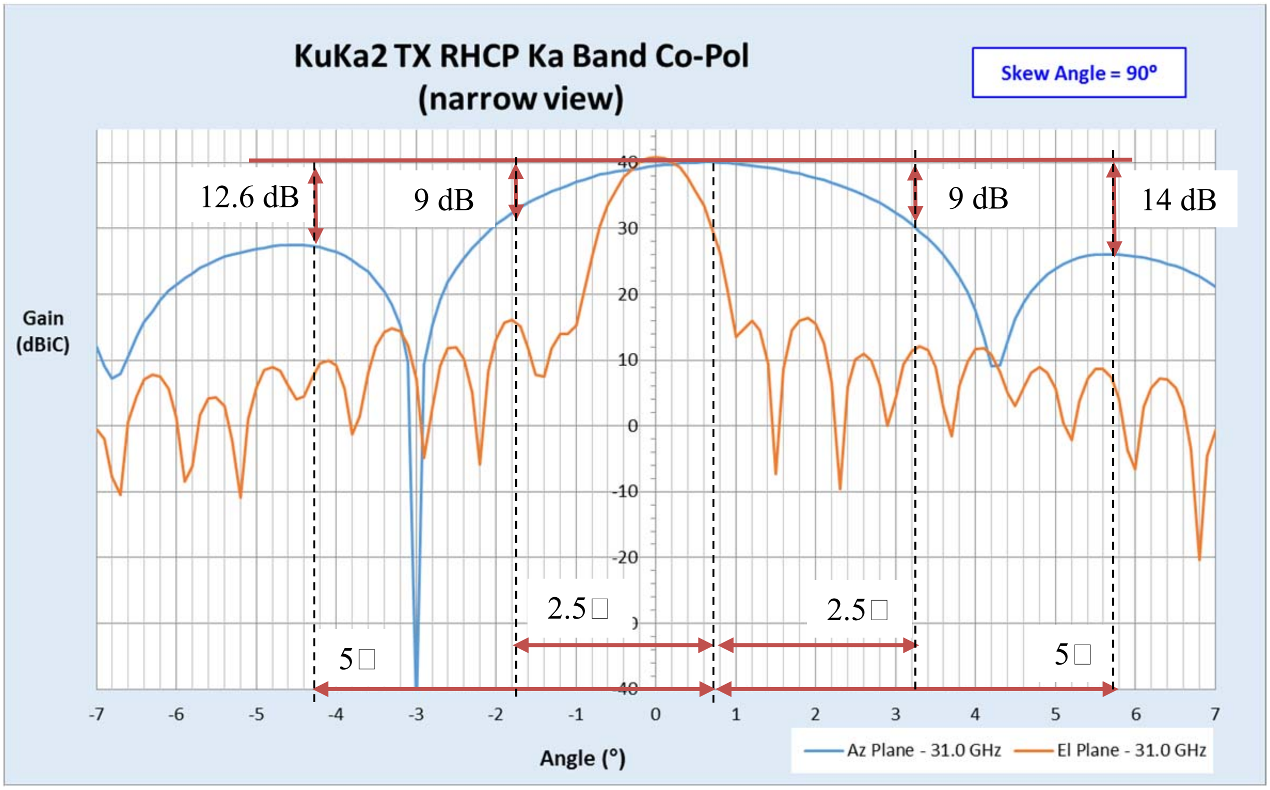

Figure 2: Measured RHCP Transmit Terminal Antenna narrow pattern cuts (+/- 7.0°) for worst case Skew angle 90°. These patterns are measured with radome.

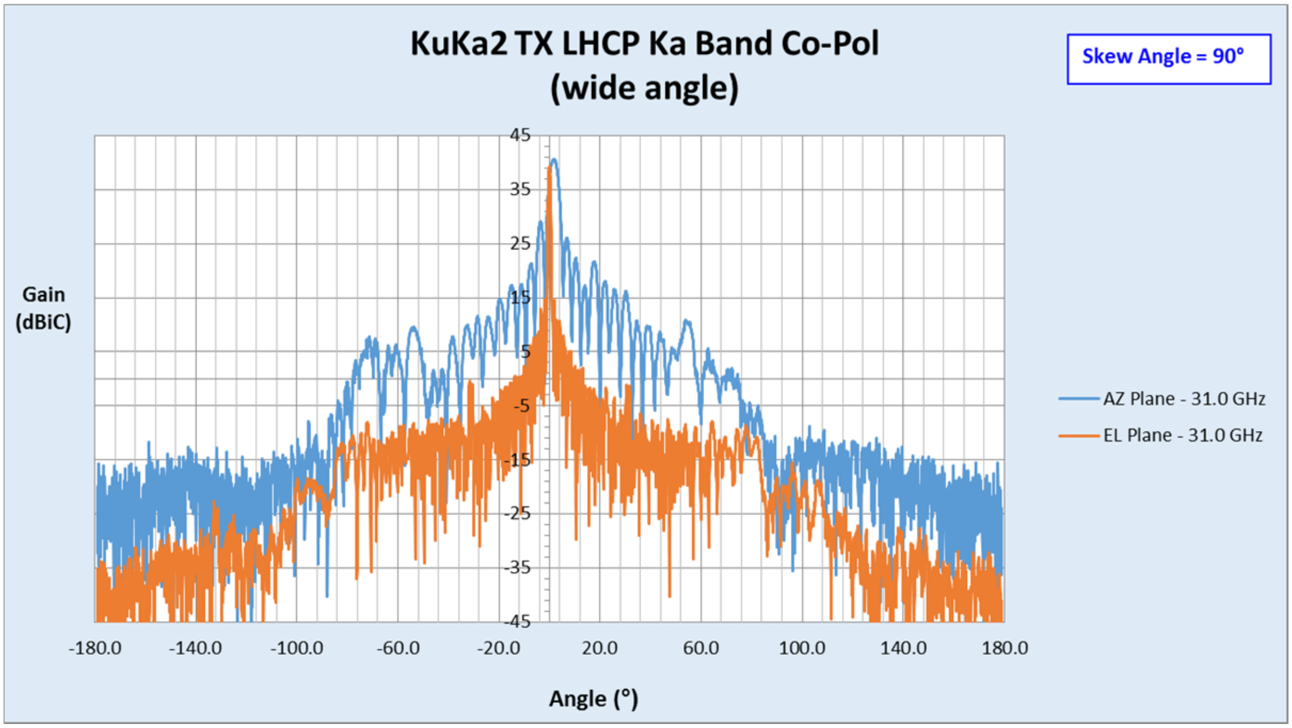

Figure 3: Measured LHCP Transmit Terminal Antenna wide pattern cuts for worst case Skew angle 90°. These patterns are measured with radome.

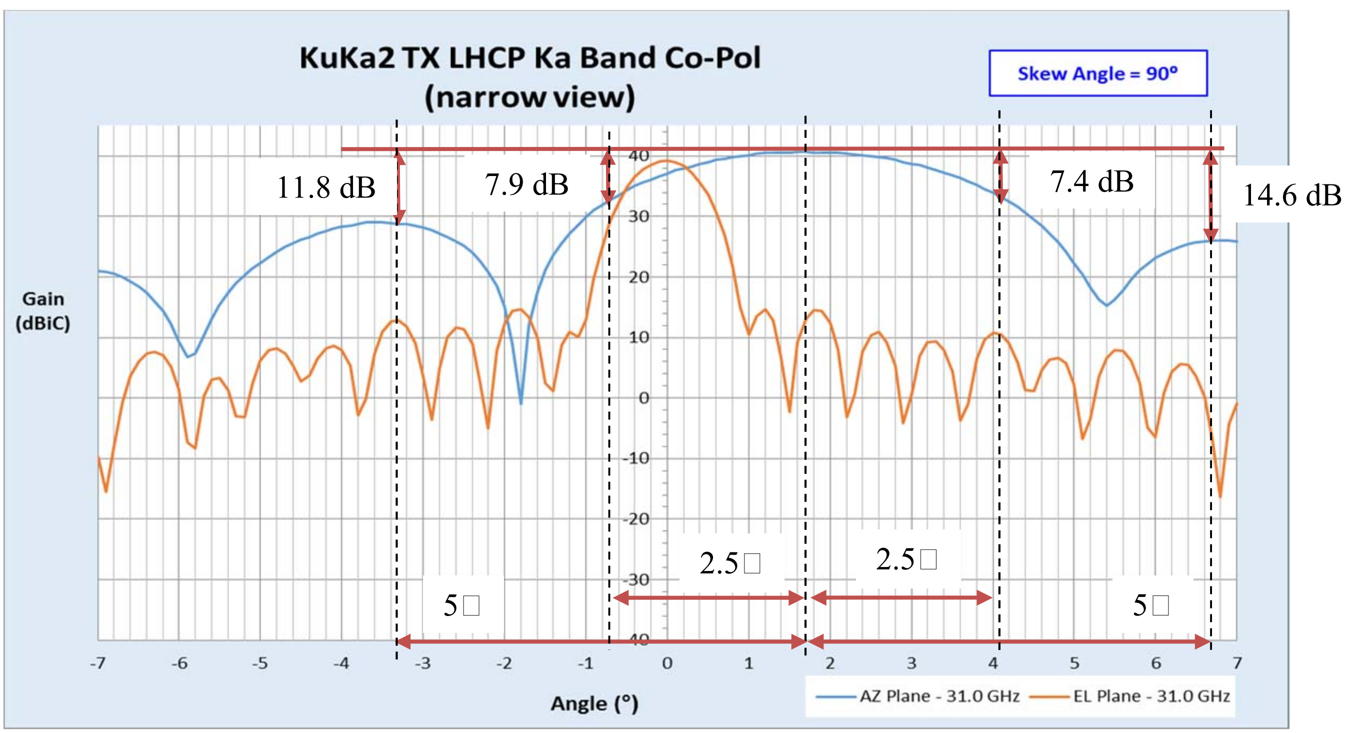

Figure 4: Measured LHCP Transmit Terminal Antenna narrow pattern cuts (+/- 7.0 deg) for worst case Skew angle 90 deg. These patterns are measured with radome.

- RHCP Transmit: (From Figure 2)
    - Minimum rejection at +/-2.5° is 9 dB
    - Minimum rejection at +/-5° is Min(12.6,14.0) = 12.6 dB

- LHCP Transmit: (From Figure 4)
    - Minimum rejection at +/-2.5° is Min(7.9,7.4) = 7.4 dB
    - Minimum rejection at +/-5° is Min(11.8,14.6) = 11.8 dB

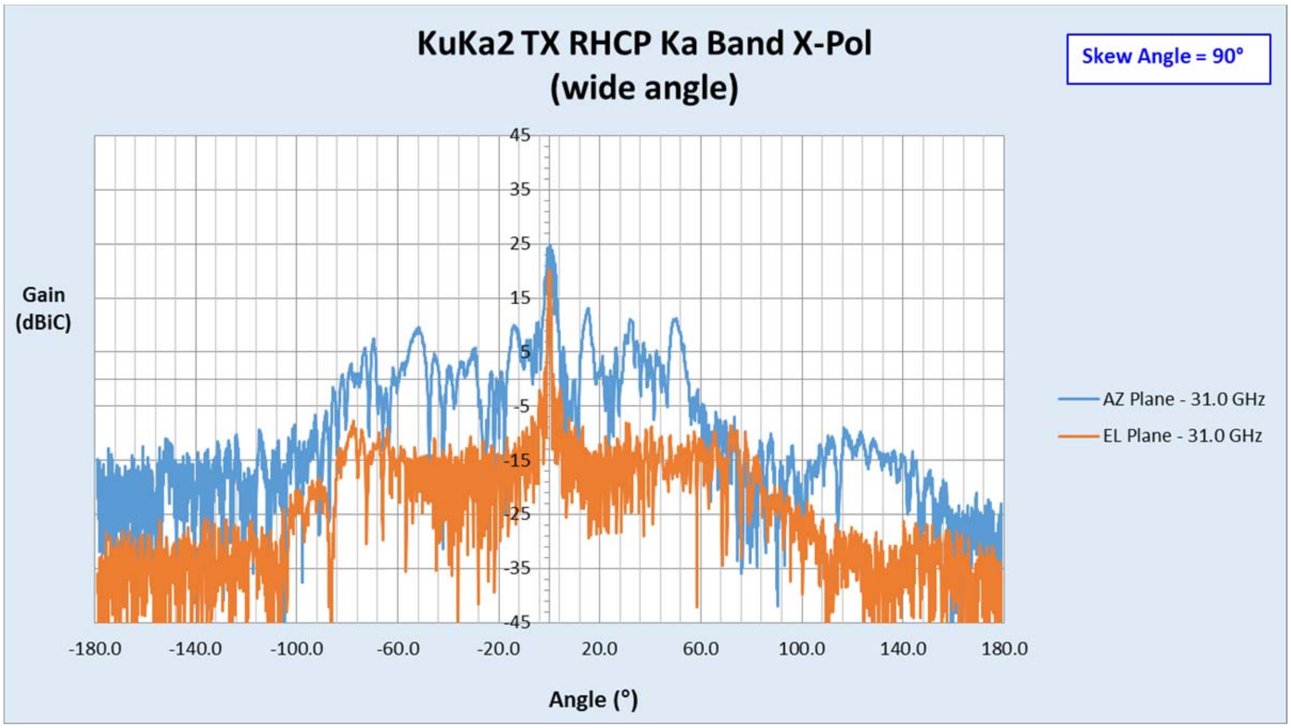

Figure 5: Measured RHCP Transmit Terminal Antenna wide pattern X-Pol cuts for worst case Skew angle 90°. These patterns are measured with radome.

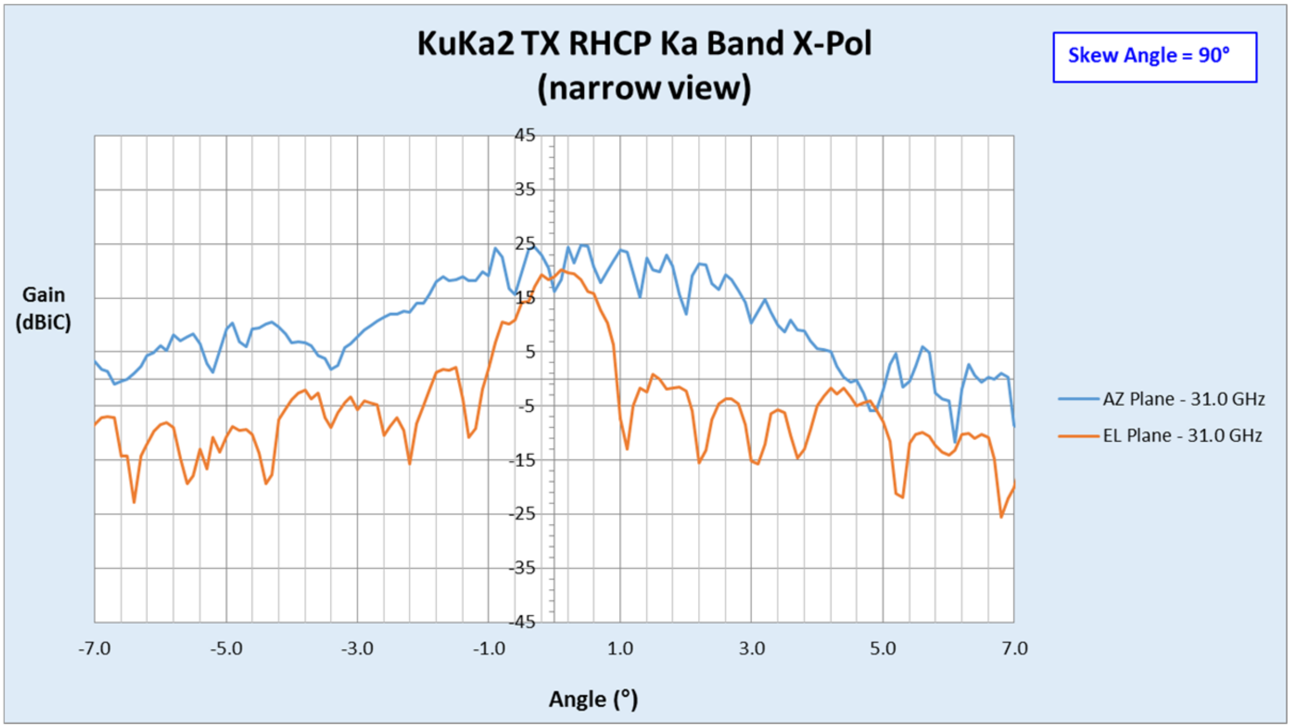

Figure 6: Measured RHCP Transmit Terminal Antenna narrow pattern X-Pol cuts (+/- 7.0°) for worst case Skew angle 90°. These patterns are measured with radome.

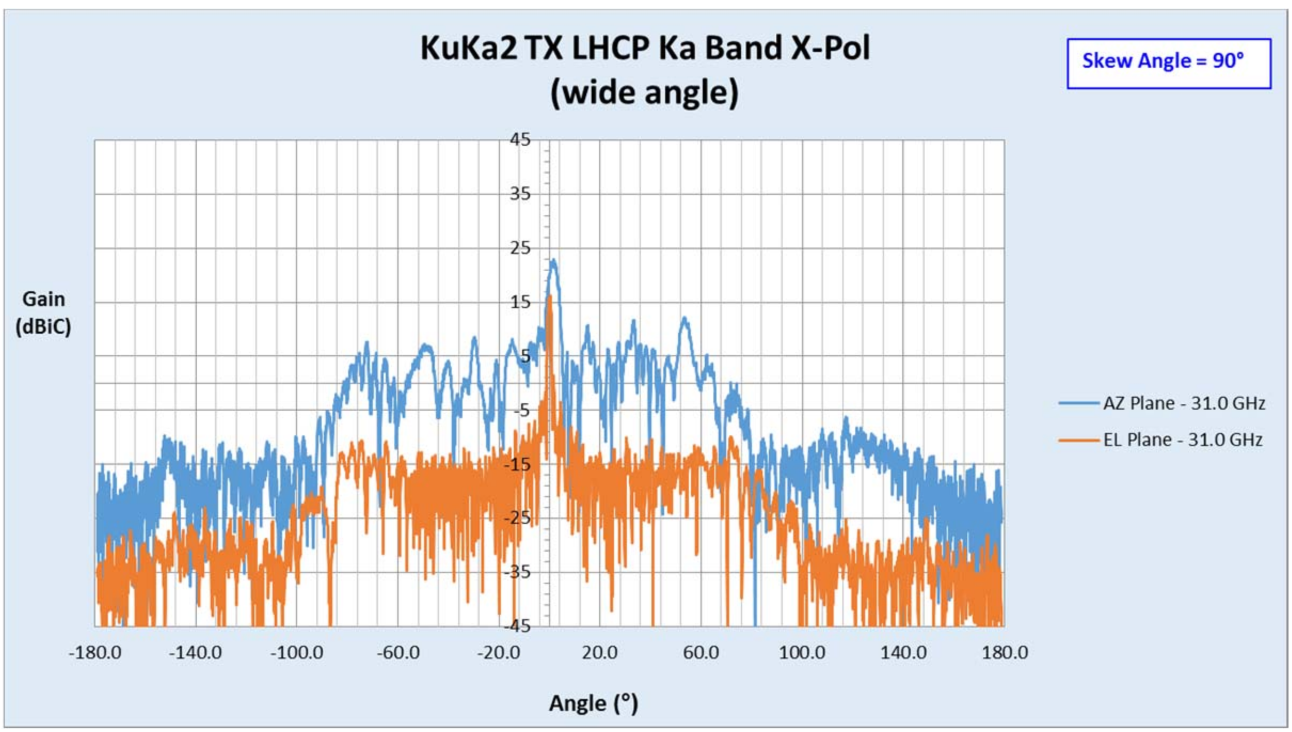

Figure 7: Measured LHCP Transmit Terminal Antenna wide pattern X-Pol cuts for worst case Skew angle 90°. These patterns are measured with radome.

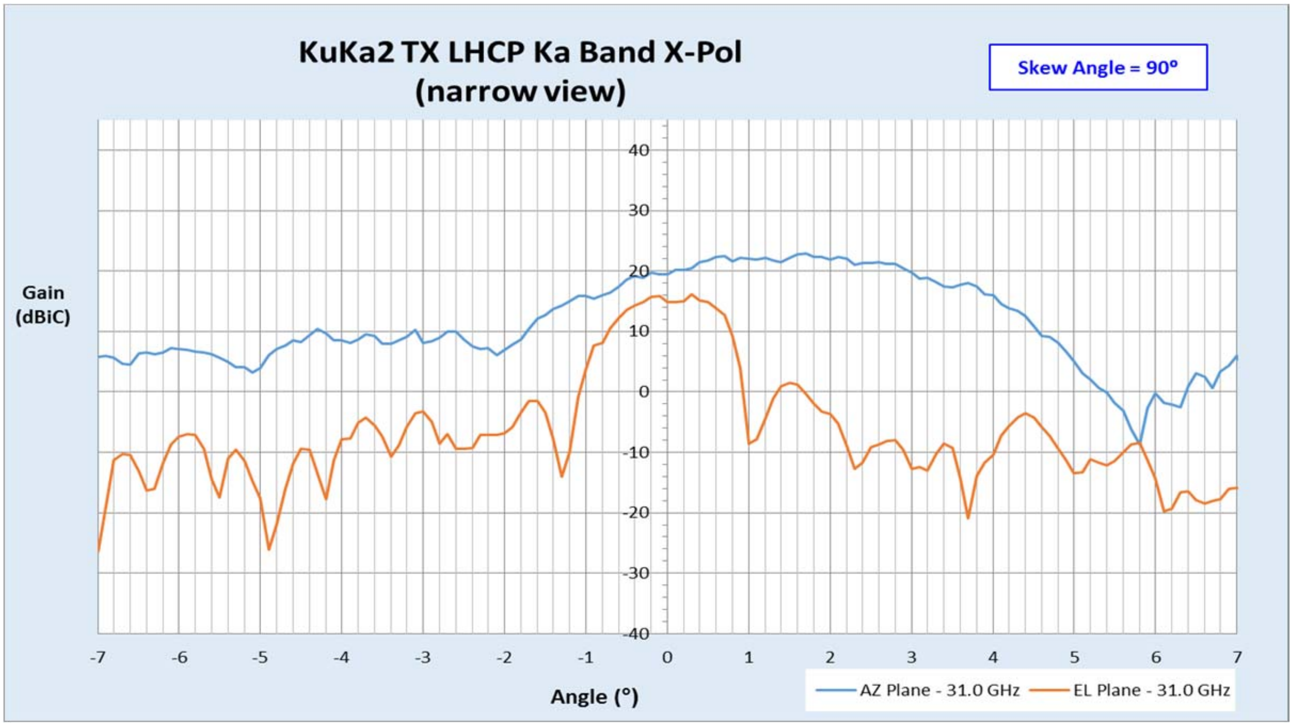

Figure 8: Measured LHCP Transmit Terminal Antenna narrow pattern X-Pol cuts (+/- 7.0°) for worst case Skew angle 90°. These patterns are measured with radome.

Flight Plan

Figure 11 is the flight path (blue line with yellow highlight) originating at Greenville Texas where the aircraft acquires I5-F2, begins forward and return link carrier transmissions while it flies west over Phoenix, Az and Carlsbad, Ca and goes over Pacific Ocean, does a beam-to-beam handover to I5-F3 and continues for some time well in to I5-F3 coverage area and makes a 180 degree turn to return to Greenville, Texas over the same path.

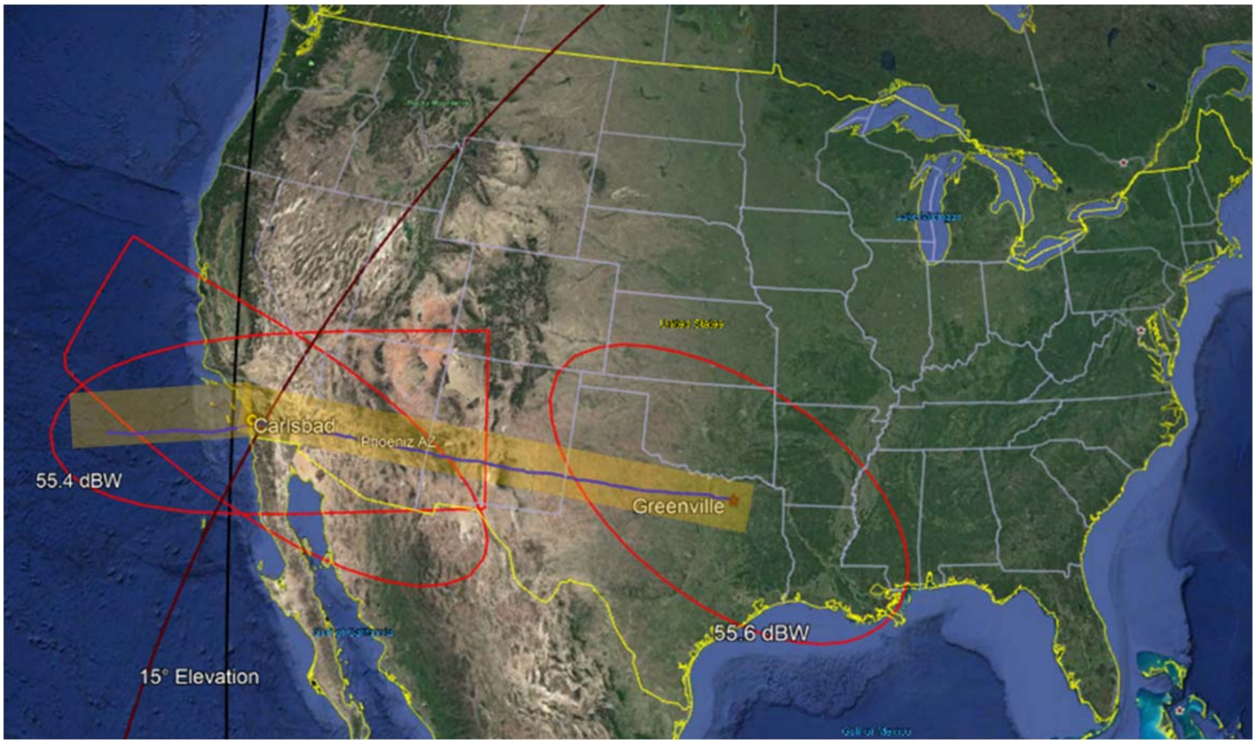

Figure 11: Potential Flight Path starting and ending at Greenville, TX (blue line with yellow highlight). The map also illustrates 2 dB down from peak EIRP contour for LHCP Forward link downlink beam in Mil-Ka band centered at Greenville, Tx and Carlsbad, Ca.

The complete details of the testing at each site have been submitted to MILDEP SMO and prior coordination with AFSMO has been initiated. Please contact Jimmy Nguyen (Jimmy.Nguyen@us.af.mil) for coordination of this test and use of the requested spectrum.

Stop Buzzer for Operation:

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Robert Ruggieri (mobile phone: 301-266-0924) or Boeing 24-hour NOC hotline: (855) 556-1001 and email: bcssnoc@boeing.com

Figure 12: ViaSat KuKa Global Aero Terminal

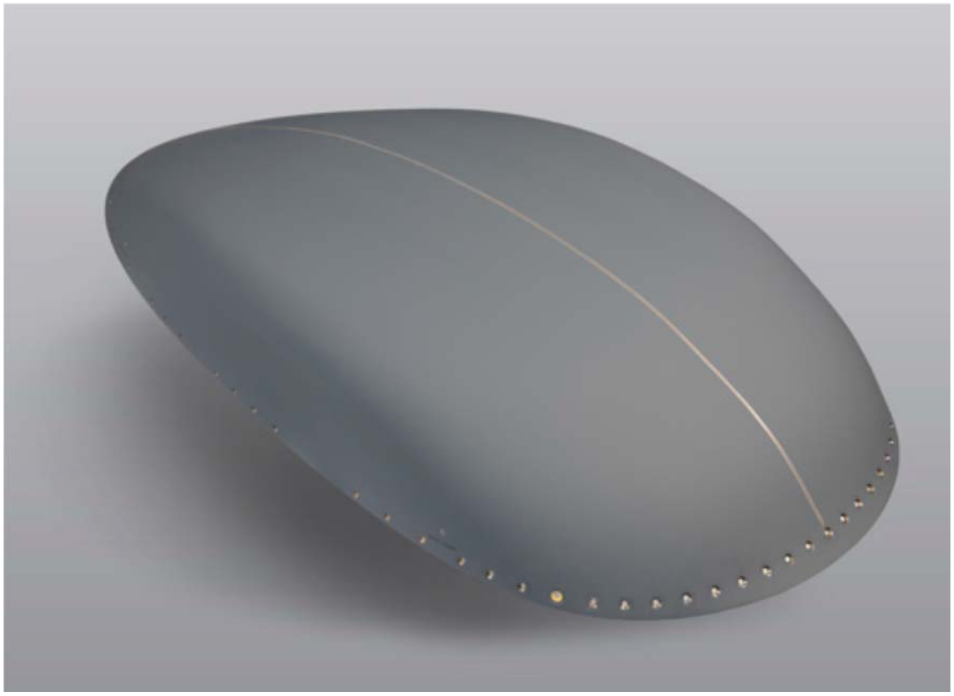

Figure 13: ViaSat