

**Request for Special Temporary Authority
to Conduct In-Orbit Testing of VIASAT-1 at 115.1° W.L.**

ViaSat, Inc. (“ViaSat”) currently is authorized to conduct in-orbit testing of ViaSat-1 at 109.2° W.L. using, among other facilities, its gateway in Denver, Colorado.¹ By this application, ViaSat seeks Special Temporary Authority (“STA”) to continue that testing at 115.1° W.L. after the satellite is located there. STA is requested for a period not to exceed thirty (30) days commencing on November 23, 2011, when ViaSat-1 is expected to arrive at 115.1° W.L. after its authorized drift from 109.2° W.L.²

ViaSat originally intended to complete in-orbit testing of ViaSat-1 at 109.2° W.L., and then relocate the satellite to 115.1° W.L. ViaSat has since determined that it can commence commercial service sooner than originally expected by completing in-orbit testing at 115.1° W.L.

ViaSat already holds “regular” authority to operate ViaSat-1 at 115.1° W.L.³ and to communicate over the Denver gateway.⁴ Thus, STA is needed only for that portion of testing at 115.1° W.L. that would be conducted at variance from regularly authorized parameters.

In-orbit testing will consist of performance verification of each beam on ViaSat-1. The Denver gateway will be used to transmit and receive test signals. Consistent with industry practices and as detailed below, that gateway and the satellite temporarily will need to operate at higher-than-regularly-authorized power levels during certain tests.⁵

To enable testing of each beam in each direction (both uplink and downlink), the spacecraft will be oriented at various times to position a given beam over Denver. In closed-loop tests, the satellite will be oriented such that both the uplink and downlink beams being tested will be positioned over the Denver gateway. In open-loop uplink tests, each uplink beam will be positioned over the Denver gateway, which will result in the corresponding downlink beam illuminating a different geographic area than under regular operations (with that signal not intended to be received by any earth station). Open-loop downlink tests will be performed on a “noise loaded” basis (there will be no uplink transmission), with each downlink beam under test being positioned over the Denver gateway.

¹ File No. SAT-STA-20110927-00188 (granted Oct. 21, 2011) File No. SES-STA-20110526-00635 (granted Oct. 14, 2011).

² *See id.*

³ File No. SAT-LOA-20110722-00132; as amended (Call Sign 2474) (granted Oct. 14, 2011).

⁴ File No. SES-LIC-20110328-00379; as amended (Call Sign E110048) (granted Oct. 21, 2011).

⁵ These parameters were approved for testing at 109.2° W.L. File Nos. SAT-STA-20110927-00188 (granted Oct. 21, 2011); SES-STA-20110526-00635 (granted Oct. 14, 2011).

Tests that involve uplink transmissions will be performed using unmodulated CW carriers transmitted from the Denver gateway. In certain cases, this will involve a maximum uplink power level of 85 dBW. Operations at these higher-than-regularly-authorized power levels will be short-term (*i.e.*, typically several minutes) and limited to two specific frequencies that, consistent with Section 25.138, are being coordinated with adjacent satellites and with the U.S. government. Those frequencies are at 28.61 GHz and 29.75 GHz on the uplink, with corresponding downlink frequencies of 18.81 GHz and 19.95 GHz. The corresponding downlink power level of 73 dBW is higher than regularly-authorized for ViaSat-1, and the resulting pfd of -89 dBW/m²/MHz exceeds the limit in Section 25.208(e). While ViaSat does not believe that the brief duration of the testing at these power levels will result in harmful interference to terrestrial users, it bears emphasis that all remaining terrestrial users in these frequency ranges operate on a secondary basis, and are not entitled to interference protection in any event.⁶ To the extent necessary, ViaSat seeks a waiver of Section 25.208(e) to allow testing at the power-density levels described above.

ViaSat is coordinating the higher-power test operations with operators of commercial Ka-band satellites within six degrees of 115.1° W.L. In the unlikely event that harmful interference nonetheless occurs, ViaSat will take all appropriate steps to eliminate such interference. In addition, ViaSat is engaged in US334 coordination process for the proposed operations.

ViaSat will make available a 24/7 point of contact should any issues arise in connection with the proposed STA operations. Personnel will be on duty at all times during the STA operations and can be contacted at (720) 493-7300.

Grant of the STA will help expedite commercial service over ViaSat-1, which will serve the public interest, convenience and necessity.

⁶ See 47 C.F.R. § 101.147(r) (stations operating in the 18.8-19.3 GHz band are no longer co-primary with Part 25 services after June 8, 2010).