

Exhibit C
Experiment Description

About ViaSat

ViaSat is in the business to connect the world. As a global broadband services and technology company, we are connecting international communities to the internet by offering residential internet service; enabling passengers and operations crews to stream high-bandwidth media, applications, and content when traveling globally on commercial, business or government aircraft and maritime vessels; and empowering international warfighters on the front lines of battle with real-time, secure internet-based intelligence, surveillance, and reconnaissance for high-requirement missions. We deliver and protect information – when and where it is needed most – with our trusted communications ground systems, infrastructure, and services.

Purpose

In addition to providing broadband internet service, ViaSat also designs and manufactures a variety of antennas. The purpose of this request for an experimental license is to test the performance of antennas and ensure they meet the design specification. The requested period of operation of operation is 7 months.

Description of Modification of Experiment

The proposed testing facility consists of a reference RF signal source antennae (“Reference Signal Antenne”) that will be located at 3095 Satellite Boulevard, Building 800, Duluth, Georgia (37°57’48” N, 84°6’51”W). The Reference Signal Antennae will be roof-mounted approximately 1 mile from the manufacturing site (33°57’47”N, 84°05’46”W), where the test antennae will be located. The Reference Signal Antennae will be directional and will be pointed approximately due east, at the manufacturing site. Due to the height of the roof mount and the ground profile, the elevation angle of the Reference Signal Antennas will be –1.7 degrees. The beamwidth of the additional Reference Signal Antenna varies by frequency and will be approximated per the following formula:

$$1,104,498.53 / F, \text{ where } F \text{ is the frequency of operation in MHz.}^1$$

The additional Reference Signal Antenna will consist of a 0.75 inch (0.019 m) diameter conical horn antenna manufactured by Sage Millimeter, model number SAC-1533-250-S2 which will generate a continuous wave (“CW”) test signal. Both Reference Signal Antennae are intended to simulate a satellite, and thus will transmit at the very low radio frequency levels that are normally received from a satellite. The ERP specified for all frequencies in the experimental license application is 242.66 mW and below the 5 mW/cm² limit for persons in the Occupational/Controlled environment specified in the Office of Engineering and Technology

¹ This is a condensed form of $(70 * \lambda) / D$, where λ is the wavelength and D is the diameter of the antenna, 0.75 in (0.019 m) in this case. A more detailed explanation can be found in Exhibit A.

(“OET”) Bulletin No. 65. A more detailed analysis of the radiation hazard for the newly added Reference Antenna is presented in Exhibit B of this submission.

In each test, the Reference Signal Antennae will transmit the CW test signal to the test antenna. Although the antennas being tested will have both transmit and receive capabilities, performance of transmit capabilities can adequately be tested by observing the receive performance in the transmit band because of the reciprocal nature of the performance in each of the transmit and receive bands. Therefore, ViaSat requests experimental license authority for only the Reference Signal Antennas.

The figure below shows the location of the transmitter and the receive test antenna located in Duluth, Georgia.



Interference to Other Services

Operation of the Reference Signal Antenna as proposed by this application is not likely to cause interference to any other licensed services or systems. As described above, the CW test signal will be emitted at extremely low power levels. Additionally, due to the narrow beamwidth and the horizontal orientation of the CW test signal, the potential for interference is remote.

RF Radiation Compliance

The operation of these user terminals will be in full compliance with the Commission’s radio frequency (RF) exposure guidelines, pursuant to Table 1 of Section 1.1307(b)(1) which states routine environment evaluation is not required for Experimental Radio Services if the power is less than 100 Watts ERP. The maximum power from the terminal will be 0.24 W ERP. Additionally, the terminal will be secured from access by the general public and will be operated by experienced test personnel.