Experiment Description

An Experimental license is requested in order to support development and operation of a transmit to receive band satellite emulator. This device will be temporarily mounted on an aircraft on the ground and be used to test and align an earth station antenna on an aircraft, without connecting to a satellite. The satellite emulator aids installation and alignment of earth station antennas aboard aircraft in two ways, it eliminates the need to tow the aircraft around the airport to check alignment, and also provides the ability to perform installations at sites that are not within the coverage area of the satellite or which may have blockage.

The initial design, integration testing, and demonstrations will take place at ViaSat's facilities in Carlsbad, CA in a campus lab environment well isolated from other public access areas.

The satellite emulator operates in the 18.3 to 20.2 GHz frequency band. The aircraft antenna will transmit in the 28.1-30 GHz band under its own commercial FCC license and the signal is received by the satellite emulator. The satellite emulator will down convert the signal by the standard 9.8 GHz and retransmit back (echo) to the aircraft antenna in the 18.3 – 20.2 GHz band.

The satellite emulator operates at very low power, typically within the same power range as receive signals expected from the satellite downlink, with a maximum output of 1 milliwatt into a small horn antenna. The output power is limited due to no gain between the mixer output and horn when communicating with the aircraft antenna.

The point of contact to cease transmissions is Chris Hofer and the phone number is 1-760-893-1674.