

Narrative

Pursuant to part 5 of the Federal Communications Commission's Rules (47 C.F.R. §5), General Atomics Aeronautical Systems, Inc. (GA-ASI), respectfully submits this application for an experimental license to transmit over-the-air (OTA) using an airborne Ku-band antenna. The purpose of this antenna is to provide for the transmission and reception of secure digital data by means of SATCOM on-the-move (OTM). This antenna is tested through laboratory measurements with attenuators on the transmitter and simulated signals on the receiver prior to operational use. The final verification tests of the airborne Ku-band antenna include transmission and reception of Ku-band signals using a geostationary satellite, with the antenna fixed on the ground and installed on the SkyGuardian Unmanned Air Vehicle (UAV).

The requested experimental operation RF functionality validation of the airborne Ku-band antenna. The validation tests will be performed both with the antenna on the ground and in the air. On the ground, an OTA RF loopback test will be conducted with the airborne Ku-band antenna and a modem. Air validation tests will be conducted with the Ku-band antenna and all of the satellite communications hardware installed on the UAV. The Ku-band antenna is a General Dynamics model M17-27A dish antenna, with a nominal EIRP of 53.17 dBW.

The requested Experimental License authorization is intended to support the development of the next generation of high data rate satellite communication (SATCOM) datalink systems for the SkyGuardian UAV. This request is intended to provide for the transmission of Ku-band signals (frequency band specified in the application), using the aforementioned Ku-band antenna, to the geostationary satellite for an operational period of one year. The antenna will be located in Poway, California and Yuma Proving Ground, Arizona.