

Raytheon IIS  
Experimental License Modification Request  
Call Sign: WI2XJO  
File Number: 0039-EX-CM-2016

### **Explanation of Modification**

Raytheon IIS holds experimental radio license WI2XJO, which it uses to test the integration of various VSAT terminals with ground communications systems for a range of customers. This application seeks to modify this license to add several additional satellites as communications points for the VSAT terminal that Raytheon IIS operates from its facilities in Sterling, VA.

### **Background**

The current license authorizes operations on the frequency band 14052-14500 MHz, with an ERP of 380.19 kW and an emission designator of 400KG7D.

The license was granted with four special conditions. It is special condition (3) that Raytheon is seeking to modify through this filing. Currently, the condition reads: "POINT OF COMMUNICATION: Intesat (sic) G-25 Satellite."

### **Reason for Modification Request**

Raytheon IIS has faced difficulties in always securing transponder availability on Intelsat G-25. As a result, Raytheon is now seeking to add the ability to transmit to the following additional satellites:

- G28 at 49 dBW at 89 degrees west
- G17 at 50.4 dBW at 91 degrees west
- G3C at 95 degrees west

The satellite downlink signals will remain in the 12 GHz band.

### **Technical Details for Additional Satellites**

The following information, which was presented to the FCC along with the original license application, is still pertinent to these operations:

**Nature of Operations:** Raytheon is using the VSAT link to test various ways to integrate satellite communications with terrestrial communications at its wireless testbed in Sterling, Virginia.

**Transmitter Power:** The maximum output power is 15 W (42.5 dBm)

**Antenna Gain:** 43.3 dBi, for a resulting ERP of 380.19 kW

**Antenna Beamwidth:** 1.2 degrees

**Transmit antenna look angles:**

**G25** (already authorized on license)

Dish = 8.2 degrees; offset is 26 degrees, look angle to satellite is 34.2 degrees

**G28**

distance 37,537km

elevation 43.3 deg

azimuth true 198.0 deg

azimuth magnetic 208.5 deg

LNB skew 13.9 deg

**G17**

distance 37,579km

elevation 42.7 deg

azimuth true 200.9 deg

azimuth magnetic 211.5 deg\

LNB skew 16.1 deg

**G3C**

distance 37,683km

elevation 41.3 deg

azimuth true 206.7 deg

azimuth magnetic 217.2 deg\

LNB skew 20.4 deg

**Elevation of transmit antenna in meters:** 89 meters

**Height of transmit antenna above ground level:** 8.3 meters

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**Conclusion:**

Raytheon IIS is filing this modification application to add three satellites to its current VSAT license, WI2XJO. Raytheon has had difficulty leasing transponder space on G25, and so the addition of three other satellites will give the company flexibility in leasing the satellite time needed for integration testing. No other changes are being made to the license, and the parameters of operation have not changed in any way from what has already been licensed.

Should there be any questions about this application, please contact Anne Cortez, Esq., WFS, at 520-344-8525 or [alc@conspecinternational.com](mailto:alc@conspecinternational.com).