To: Stephen Gillespie
E-Mail: sgillesp@harris.com
From: Doug Young
Date: November 18, 2016

Subject: Request for Info - File #0016-EX-CN-2016

Message:

The FCC's International Bureau/Satellite Division (IB/SD) has reviewed the subject request and have the following comments/questions that you need to address:

We have concerns with operations in the 2005.625 MHz band. There are a number of GSO and NGSO that operate in the 2000-2020 MHz band (please consult http://licensing.fcc.gov/myibfs/ and select "Advance Search" on the top left hand side to search frequency ranges. Applicant please provide a detail technical explanation of how the uplink earth station in the 2005.625 MHz will avoid interference with existing GSO and NGSO satellite network operations. What mitigation technic will be used to avoid pointing in the GSO arc from Florida which would have a high elevation angle tracking the HSAT-1 satellite? Also, applicant will need to coordinate with existing license satellite operators.

We want to thank the applicant for providing a cost recovery letter. Unfortunately, the FCC IB/SD has a template letter (sent in a separate correspondence) for the cost recovery and we will need the applicant to use the FCC template letter, signed and resubmit the letter to the FCC.

We notice that this application is using the Global Star modem as an inter-satellite service link. In addition, Global Star will need to submit an experimental request for their transmission to the HSAT-1 space station.

Review of Form 442 and API file:

In Form 442, UPLINK in the band 2005.625 MHz, it has the transmit power at 1500W and 4800 W ERP. However, our calculation shows the following: 1500W = 31.8 dBW and antenna gain = 35.6 dBi so the total EIRP = 67.4 dBW; converting EIRP to ERP (67.4dBW – 2.15 dB = 65.4 dBW; converting from dBW to W (65.4/10 = 6.54; raise to 10^6.54 = 3,467,368 W). Please verify your output power level, check the ERP calculation and update the related documents as appropriate.

Similar issue with in form 442, DOWNLINK transmit power of 2 W and 6 W ERP. Please check the calculation and update as appropriate.

We note that RR No. 4.4 (box C2c) is not marked “Y” for both uplink and downlink; is the applicant seeking protection/status in this band? Also, this band may require ITU coordination and applicant may need to submit a CR/C filing as well but will consult and confirm if this is the case.

In the API file, UPLINK beam, group id 1,

- The max peak power (box C8a1/C8b1) and min peak power (box C8c1) have a value of 33.8 dBW (which is 2399 W) which is inconsistent with Form 442 power value of 1500 W. Applicant please verify the power level and update all the related documents as appropriate.
- Also note that if the power level changes so will the power spectral density in boxes C8a2/C8b2 and C8c3. The power spectral equation PSD = Power (dBW) – 10Log10 (Bandwidth in Hertz).
- Provide the e.i.r.p. on the beam axis in box C.8.f.2

In the API file, DOWNLINK beam, group id 2,

- The max peak power (box C8a1/C8b1) and min peak power (box C8c1) have a value of 7.6 dBW

(which is 5.8 W) which is inconsistent with Form 442 power value of 2W. Applicant please verify the power level and update all the related documents as appropriate.

- Also note that if the power level changes so will the power spectral density in boxes C8a2/C8b2 and C8c3. The power spectral equation PSD = Power (dBW) – 10Log10 (Bandwidth in Hertz).
- Provide the e.i.r.p. on the beam axis in box C.8.f.2

Other API issues:

Form 442 and Exhibit 1 indicates that the Global Star modem will be used. Applicant will need to provide the transmit, receive and antenna information for operations in the 1615-1618.5 MHz and 2483.5-2500 MHz band in the API file.

Also there is mention of receiving VHF AIS signals. Applicant will need to provide earth station transmitting VHF AIS signals and the monopole VHF antenna information in the API file.

Lastly, we will need to know more about the earth station transmitting in the 159.0125 MHz, 195 MHz, 397.5 MHz and 1260 MHz and received signals into the broad bandwidth deployable antenna. Can the earth station information be provided into the API file?

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of November 18, 2016 may result in application dismissal pursuant to Section 5.67 and forfeiture of the filing fee pursuant to Section 1.1108.

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Responses to this correspondence must contain the Reference number : 34771