

To: William Wiltshire  
E-Mail: wwiltshire@hwglaw.com  
From: Anthony Serafini  
Date: December 18, 2020

Subject: Questions

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Message:

Please respond to the following questions:

() please explain how the submitted EIRP Mask referenced in dBW/40KHz will comply with the "Reference antenna beamwidth and reference radiation pattern: 4° Recommendation ITU-R S.672-4, Ls-20 specified in Table 22-2. Please provide the antenna radiation pattern for 0.48m antenna.

() With respect to the 14.0-14.5 GHz frequency band, please demonstrate and provide calculation on how the operations in the 14.0-14.5 GHz frequency band will be in compliance with the equivalent power flux-density limit (-160 dBW/m<sup>2</sup>/40 kHz) of Article 22 of the ITU Radio Regulations.

() Section 22.5D and Table of 22-2 of Article 22 of ITU's rules:

TABLE 22-2 (WRC-03)Limits to the epfdup radiated by non-geostationary-satellite systems in the fixed-satellite service in certain frequency bands:

Frequency band antenna radiation	epfdup(dB(W/m <sup>2</sup> ))	Percentage of time epfdnlevel may not be exceeded	Reference bandwidth (kHz)	Reference beamwidth and reference pattern
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13.75-14.5 GHz Recommendation ITU-R S.672-4, Ls-20	-160	100	40	4°
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(Please see attachment of "RECOMMENDATION ITU-R S.672-4, Ls-20" and Section 25.103 of part 25 Rules for Equivalent Power Flux Density (EPFD).

22.5D 3) The equivalent power flux-density, epfdup, produced at any point in the geostationary-satellite orbit by emissions from all the earth stations in a non-geostationary-satellite system in the fixed-satellite service in the frequency bands listed in Table 22-2, for all conditions and for all methods of modulation, shall not exceed the limits given in Table 22-2 for the specified percentages of time. These limits relate to the equivalent power flux-density which would be obtained under free-space propagation conditions, into a reference antenna and in the reference bandwidth specified in Table 22-2, for all pointing directions towards the Earth's surface visible from any given location in the geostationary-satellite orbit.

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 December 18, 2020 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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