From: Justin Robinson

To: Doug Young
Date: June 09, 2020

Subject: Request for Info - File # 0053-EX-CN-2020

Message:

To who it may concern. We acknowledge our tardiness in communications. The employee used as the point of contact has left our organization. Below is the response to the latest request for information. I hope that it will be considered. Thank you for your time.

Bennett Weir
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Submit the following information so that processing can continue
1. The PFD level calculation at the surface of the earth
2. The PFD level calculation at the GEO belt
Reference number: 54479

The antenna is ground mounted inside a spherical radome. For the PDF calculation on the surface of the earth I estimated that the PFD at the radome is level over the front half of the radome. The radiated energy will be spread over a 1024 kHz channel. Please respond if I again misinterpreted this.

For the 1.2M Antenna:
1) PFD level calculation at the surface of earth.

Total PFD=(Pr/4*pi*R^2)*2
Total PFD=25W/(4*pi*0.6^2)*2
Total PFD= 11W/m^2 (10.43 dBW/m^2)
PFD in 4kHz = Total PFD * (4kHz/1024kHz)
PFD in 4kHz = 0.04297W/m^2 (-13.67 dBW/m^2)

2) PFD level calculation at the GEO belt.

PFD=ERP/(4*pi*r^2)
PFD= 96182.52/(4*pi*35786000^2)
PFD= 5.9767e-12 W/m^2 (-112.2 dBW/m^2)
PFD in 4kHz = Total PFD * (4kHz/1024kHz)
PFD in 4kHz = 2.33e-14W/m^2 (-136 dBW/m^2)

For the 2.4M Antennas:
1) PFD level calculation at the surface of earth.

PFD=(Pr/4*pi*R^2)*2
PFD=25W/(4*pi*1.2^2)*2
PFD= 2.76 W/m^2 (4.41 dBW/m^2)
PFD in 4kHz = Total PFD * (4kHz/1024kHz)
PFD in 4kHz = 0.0108W/m^2 (-19.67 dBW/m^2)

2) PFD level calculation at the GEO belt.

PFD=ERP/(4*pi*r^2)

PFD= 382909.5/(4*pi*35786000^2)
PFD= 2.37936e-11 W/m^2 (-106.2 dBW/m^2)
PFD in 4kHz = Total PFD * (4kHz/1024kHz)
PFD in 4kHz = 9.29e-14 W/m^2 (-130 dBW/m^2)

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