Attachment 1

Interference Analysis - PFD at the Geostationary Satellite Orbit

ITU RR 22.5 states that in 8025-8400 MHz band “the maximum power flux-density produced at the geostationary-satellite orbit by any Earth exploration-satellite service space station shall not exceed −174 dB(W/m^2) in any 4 kHz band.” At the maximum 643.7 km altitude for YAC-1 spacecraft, assuming the spacecraft is pointed directly at geostationary orbit, the PFD would be approximately -194.4 dBW/m^2, which complies with the limit.

PFD Calculation

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EIRP = 16 dBW

EIRP Density = -32.5 dBW per 4.0 kHz Ref BW

$\theta = 0°$

D = 35142.3 km

PFD = -194.4 dBW/m^2 @ 4.0 kHz Ref BW