

From: Ross Coffelt

To: John Kennedy

Date: January 04, 2006

Subject:

FCC File # 0286-EX-PL-2005

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Message:

You asked:

Is the 150 watts the power before or after attenuation by the insulator?

I'm not quite sure of what you mean by the insulator, but I guess you are talking about the anechoic foam that we have on the ceiling of the test range where these satellites are going to be emitting. Each satellite will, in turn, be radiating up towards this foam via highly directional antennas whose gains are shown below. The transponder power will vary from 44 to 150 watts depending upon the satellite and transponders in use. I hope that this helps to answer your question.

#### A Note on the Calculations of the Uplink and Downlink Power Levels

In the exhibit labeled "PDF of Frequency Spreadsheet" the ERP power levels of the bands labeled "Uplink" at the extreme right of the table, do not include any attenuation due to absorber placed around the antennas, or for building attenuation effects. These levels are the expected levels coming out of the test antennas. For the transponder channels labeled "Downlink" we factored in 50 dB of absorber attenuation and 20 dB of building into the ERP numbers as detailed in the exhibit "PDF of Power and Transmitter number justification", and repeated here for clarity:

#### Gain Progression for the Transponder Downlinks

Optus (D1 & D2):

| Xponder Power (Watts) | Ant Gain (dB) | Chamber Atten (dB) | Bldg Atten (dB) | System Losses (dB) | ERP (dBW) |
|-----------------------|---------------|--------------------|-----------------|--------------------|-----------|
| 150                   | 35.15         | 50                 | 20              | 2                  | -15.09    |
| 125                   | 38.64         | 50                 | 20              | 2                  | -12.39    |
| 44                    | 44.26         | 50                 | 20              | 2                  | -11.31    |

PAS-11:

| Xponder Power (Watts) | Ant Gain (dB) | Chamber Atten (dB) | Bldg Atten (dB) | System Losses (dB) | ERP (dBW) |
|-----------------------|---------------|--------------------|-----------------|--------------------|-----------|
| 150                   | 37.52         | 50                 | 20              | 2                  | -12.72    |

Horizons-2: