

TELEMETRY (Faded)

| PARAMETER | UNITS | SPOT | OMNI |
|--|-------------------|-------------|-------------|
| Frequency (Worst Case for Tx Ant) | GHz | 11.7 | 11.7 |
| Range | km | 39,347 | 39,347 |
| Telemetry EIRP | dBW | 17.5 | 7.5 |
| Range loss | dB/m ² | -162.9 | -162.9 |
| Rain Fade | dB | -1.2 | -1.2 |
| Scintillation | dB | -0.2 | -0.2 |
| Co-polarization Inclined Orbit Mismatch | dB | -0.1 | -0.1 |
| Tracking Gain | dB | -0.1 | -0.1 |
| Isotropic gain | dB | -42.6 | -42.6 |
| Clear Sky GW Antenna G/T | dB/°K | 33.8 | 33.8 |
| G/T Degradation Due to Fade | dB | -1.2 | -1.2 |
| Boltzmann's Constant | dBW/Hz·°K | 228.6 | 228.6 |
| Received C/No | dB·Hz | 71.6 | 61.6 |
| Received C/Io | dB·Hz | 71.6 | 61.6 |
| Received C/(No+Io) | dB·Hz | 68.6 | 58.6 |
| Data Rate | kbps | 4 | 1 |
| TM Mod Index | radians | 0.9 | 0.9 |
| Data Rate | dB·Hz | 36 | 30 |
| Mod loss | dB | 3.9 | 3.9 |
| Implementation loss | dB | 3 | 3 |
| Theoretical Eb/No (BER 1E- 6) | dB·Hz | 10.8 | 10.8 |
| Required C/No | dB·Hz | 53.7 | 48 |
| Faded Margin | dB | 14.9 | 10.6 |

COMMAND (Faded)

| PARAMETER | UNITS | SPOT | OMNI |
|--|--------------------|-------------|-------------|
| Frequency (Worst Case) | GHz | 14.0 | 14.5 |
| Range | km | 39.347 | 39.347 |
| Uplink EIRP | dBW | 68 | 83 |
| Range loss | dB/m ² | -162.9 | -162.9 |
| Rain Fade | dB | -2 | -2 |
| Scintillation | dB | -0.2 | -0.2 |
| Co-polarization Inclined Orbit Mismatch | dB | -0.1 | -0.1 |
| Tracking Gain | dB | -0.3 | -0.3 |
| PFD | dBW/m ² | -97.5 | -82.5 |
| Required PFD | dBW/m ² | -100 | -85 |
| Link Margin | dB | 2.5 | 2.5 |