

Representative Return Link Budget

| UT Type | | Personal Accessory |
|--|-----------------|--------------------|
| Carrier Type | | CDMA |
| <u>General Parameters</u> | | |
| Gateway elevation angle | deg | 42.0 |
| Minimum user elevation angle | deg | 20.0 |
| Uplink frequency | GHz | 2.020 |
| Downlink frequency | GHz | 19.700 |
| Bandwidth/carrier | kHz | 1,250.0 |
| <u>Uplink</u> | | |
| Uplink EIRP | dBW | 5.0 |
| Free space loss | dB | 190.5 |
| Atmospheric loss | dB | 0.1 |
| Uplink propagation margin | dB | 11.6 |
| Satellite receive antenna gain (-3 dB contour) | dB _i | 42.3 |
| Satellite receive system noise temperature | dB-K | 27.3 |
| Satellite receive antenna G/T | dB/K | 15.0 |
| Uplink C/N ₀ | dBHz | 46.4 |
| Uplink C/I ₀ Intra-system | dBHz | 44.3 |
| Uplink C/I ₀ External Interference | dBHz | 56.4 |
| <u>Downlink</u> | | |
| Satellite EIRP (peak) | dBW | 25.6 |
| Free space loss | dB | 209.8 |
| Atmospheric loss | dB | 0.4 |
| Rain attenuation | dB | 10.0 |
| E/S antenna gain | dB | 66.5 |
| E/S antenna pointing error | dB | 0.3 |
| Nominal system noise temperature | dB-K | 23.9 |
| Nominal E/S G/T | dB/K | 42.3 |
| System noise temperature degradation in rain | dB | 3.1 |
| Rain-degraded system noise temperature | dB-K | 27.0 |
| Rain-degraded E/S G/T | dB/K | 39.2 |
| Downlink C/No | dBHz | 72.9 |
| Downlink C/IM ₀ | dBHz | 63.9 |
| Downlink C/I ₀ Intra-system | dBHz | 69.3 |
| Downlink C/I ₀ ASI | dBHz | 82.8 |
| <u>End-to-End Performance</u> | | |
| End-to-end C/N ₀ | dBHz | 46.4 |
| End-to-end aggregate C/I ₀ | dBHz | 44.1 |
| End-to-end C/IM ₀ | dBHz | 63.9 |
| Total aggregate C/(N ₀ +I ₀ +IM ₀) | dBHz | 42.0 |
| Total aggregate C/(N+I+IM) | dB | -18.9 |
| Required C/N | dB | -18.9 |
| System Margin | dB | 0.0 |