

TYPICAL C-BAND LINK BUDGETS

| | | 24K0G7D | 26K7G7D | 80K0G7D | 106K0G7D | 160K0G7D | 640K0G7D | 4M33G7D | 6M10G7W | 6M10G7W | 6M10G7W | 30M0G7W | 8M00G7D | 8M00G7D | 36M0F9F | 36M0F9F | 33M3G7D |
|-----------------------------------|----------|---------|---------|---------|----------|----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| G rx sat | (dBi) | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 | 28.4 |
| T sat | (K) | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 | 446.7 |
| G tx sat | (dBi) | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 |
| Transp BW | (MHz) | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| Signal BW | (MHz) | 0.024 | 0.0267 | 0.08 | 0.106 | 0.16 | 0.64 | 4.33 | 6.1 | 6.1 | 6.1 | 30 | 8 | 8 | 36 | 36 | 33.3 |
| C/Nthr Clr Sky | (dB) | 5.3 | 8.3 | 7 | 2.8 | 2.8 | 2.8 | 6.1 | 6.4 | 6.4 | 6.4 | 9.8 | 6.1 | 6.1 | 13 | 13 | 9.8 |
| Service Area | | | | | | | | | | | | | | | | | |
| Uplink EOC U/L | (dB) | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 |
| G 1m² | (dBi) | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 |
| G/T max | (dB/K) | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| FSL | (dB) | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 | 200.2 |
| L atmos | (dB) | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0 | 0 | 0.15 |
| Space Station SFD/EIRP | | | | | | | | | | | | | | | | | |
| Min | | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 | -100.4 |
| Max | | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 | -80.4 |
| PAD wrt mid-range | (dB) | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -6 | -3 | -3 | 4.5 | 4.5 | -6 |
| SFD (@ Beam Ctr) | (dBW/m²) | -93.4 | -93.4 | -93.4 | -93.4 | -93.4 | -93.4 | -93.4 | -93.4 | -93.4 | -93.4 | -96.4 | -93.4 | -93.4 | -85.9 | -85.9 | -96.4 |
| Sat EIRP max | (dBW) | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 | 43.2 |
| Uplink (TX Earth Station) | | | | | | | | | | | | | | | | | |
| Diam | (m) | 7 | 7 | 7 | 8 | 4.5 | 7 | 4.5 | 7 | 7 | 7 | 8 | 8 | 8 | 8 | 8 | 10 |
| Gtx | (dBi) | 51.3 | 51.3 | 51.3 | 52.4 | 47.4 | 51.3 | 47.4 | 51.3 | 51.3 | 51.3 | 52.4 | 52.4 | 52.4 | 52.4 | 52.4 | 54.4 |
| EIRP ES (EOC) | (dBW) | 39.8 | 42.3 | 46.3 | 47.4 | 49.1 | 55.3 | 60.6 | 63.3 | 63.3 | 63.3 | 71.4 | 63.9 | 63.9 | 78.0 | 78.0 | 71.6 |
| Ptx (EOC) | (dBW) | -11.5 | -9.0 | -5.0 | -5.0 | 1.7 | 4.0 | 13.2 | 12.0 | 12.0 | 12.0 | 19.0 | 11.5 | 11.5 | 25.6 | 25.6 | 17.3 |
| Ptx (COB) | (dBW) | -15.5 | -13.0 | -9.0 | -9.0 | -2.3 | 0.0 | 9.2 | 8.0 | 8.0 | 8.0 | 15.0 | 7.5 | 7.5 | 21.6 | 21.6 | 13.3 |
| Downlink (Space Station) | | | | | | | | | | | | | | | | | |
| Ptx (max COB) | (dBW) | -18.4 | -15.9 | -11.9 | -10.9 | -8.9 | -2.9 | 2.6 | 5.1 | 5.1 | 5.1 | 14.6 | 5.6 | 5.6 | 11.6 | 11.6 | 14.6 |
| Ptx (min EOC) | (dBW) | -21.4 | -18.9 | -14.9 | -13.9 | -11.9 | -5.9 | -0.4 | 2.1 | 2.1 | 2.1 | 14.5 | 2.6 | 2.6 | 11.5 | 11.5 | 14.5 |
| EIRP sat | (dBW) | 10.2 | 12.7 | 16.7 | 17.7 | 19.7 | 25.7 | 31.2 | 33.7 | 33.7 | 33.7 | 43.2 | 34.2 | 34.2 | 40.2 | 40.2 | 43.2 |
| RX Earth Station | | | | | | | | | | | | | | | | | |
| Diameter | (m) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 7 | 8 | 4.5 | 7 | 10 | 4.5 | 7 | 10 |
| G rx ES | (dBi) | 43.5 | 43.5 | 43.5 | 43.5 | 43.5 | 43.5 | 43.5 | 43.5 | 47.4 | 48.5 | 43.5 | 47.4 | 50.5 | 43.5 | 47.4 | 50.5 |
| T ES | (K) | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| U/L Interference Allocations | | | | | | | | | | | | | | | | | |
| (C/I)U/L X-pol, Adj Ch, ASI, IMOD | (dB) | 15.0 | 17.0 | 16.3 | 16.1 | 16.3 | 16.2 | 13.4 | 14.5 | 14.5 | 14.5 | 19.9 | 13.8 | 13.8 | 27.6 | 27.6 | 19.4 |
| C/N Thermal Up | (dB) | 25.5 | 27.6 | 26.8 | 26.6 | 26.8 | 26.8 | 24.0 | 25.0 | 25.0 | 25.0 | 26.1 | 24.3 | 24.3 | 32.8 | 32.8 | 25.6 |
| (C/N) Total Up | (dB) | 14.6 | 16.7 | 15.9 | 15.7 | 15.9 | 15.9 | 13.1 | 14.1 | 14.1 | 14.1 | 19.0 | 13.4 | 13.4 | 26.5 | 26.5 | 18.5 |
| D/L Interference Allocations | | | | | | | | | | | | | | | | | |
| (C/I)U/L X-pol, Adj Ch, ASI, IMOD | (dB) | 15.7 | 17.7 | 16.9 | 16.7 | 16.9 | 16.9 | 14.1 | 15.1 | 15.8 | 15.9 | 20.7 | 15.1 | 15.4 | 20.2 | 24.0 | 22.4 |
| C/N Dn (COB) | (dB) | 22.8 | 24.8 | 24.0 | 23.9 | 24.0 | 24.0 | 21.2 | 22.2 | 25.9 | 27.1 | 24.9 | 25.4 | 28.2 | 21.4 | 25.3 | 31.0 |
| (C/N) Total Dn (COB) | (dB) | 14.9 | 16.9 | 16.1 | 15.9 | 16.1 | 16.1 | 13.3 | 14.3 | 15.4 | 15.6 | 19.3 | 14.7 | 15.2 | 17.7 | 21.6 | 21.9 |
| C/N Dn (EOC) | (dB) | 15.8 | 17.8 | 17.0 | 16.9 | 17.0 | 17.0 | 14.2 | 15.2 | 18.9 | 20.1 | 20.8 | 18.4 | 21.2 | 19.3 | 23.2 | 26.9 |
| (C/N) Total Dn (EOC) | (dB) | 10.0 | 11.9 | 11.2 | 11.0 | 11.2 | 11.1 | 8.3 | 9.4 | 11.2 | 11.6 | 16.3 | 10.6 | 11.5 | 15.6 | 19.5 | 20.2 |
| C/N total max | (dB) | 11.8 | 13.8 | 13.0 | 12.8 | 13.0 | 13.0 | 10.2 | 11.2 | 11.7 | 11.8 | 16.1 | 11.0 | 11.2 | 17.2 | 20.4 | 16.9 |
| C/N total min | (dB) | 8.7 | 10.7 | 9.9 | 9.7 | 9.9 | 9.9 | 7.1 | 8.1 | 9.4 | 9.7 | 14.4 | 8.8 | 9.3 | 15.3 | 18.7 | 16.3 |
| Link Margin | (dB) | 3.4 | 2.4 | 2.9 | 6.9 | 7.1 | 7.1 | 1.0 | 1.7 | 3.0 | 3.3 | 4.6 | 2.7 | 3.2 | 2.3 | 5.7 | 6.5 |