

ECHOSTAR-8 Link Budgets

Medium Power Mode

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| Link Parameters | 1 |
| | 13 meter Feeder Link E/S |
| | Nominal Feeder Link Site |
| | to |
| | 45 cm Receive-Only |

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| Modulation Parameters: | |
| Information Bit Rate per Carrier | (kbps) 27,647 |
| FEC Rate | 3/4 |
| Reed-Solomon Ratio (188/204, None) | 188/204 |
| Overall Coding Overhead | (%) 44.7% |
| Modulation Type (BPSK/QPSK/8PSK/16QAM) | QPSK |
| Filter Roll-off Factor ("alpha") | (%) 20 |

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| Link Geometry: | |
| Satellite Longitude | (°East) -77.0 |
| Tx E/S City Location | (name) Cheyenne |
| Tx E/S Longitude | (°East) -104.7 |
| Tx E/S Latitude | (°North) 41.1 |
| Tx E/S Range to Satellite | (Km) 38,209 |
| Tx E/S Elevation to Satellite | (°) 34.7 |
| Tx E/S Altitude | (m) 1876.0 |
| Rx E/S City Location | (name) Mexico City |
| Rx E/S Longitude | (°East) -99.2 |
| Rx E/S Latitude | (°North) 19.4 |
| Rx E/S Range to Satellite | (km) 36,725 |
| Rx E/S Elevation to Satellite | (°) 56.0 |
| Rx E/S Altitude | (m) 2240.0 |

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| Link (per carrier): | |
| Carrier Frequency | (MHz) 17,550 |
| HPA Power Level (to give required PFD at satellite) | (W) 44.4 |
| HPA Power in dBW | (dBW) 16.5 |
| Post-HPA Losses | (dB) 2.0 |
| Tx E/S Power to Antenna in dBW | (dBW) 14.5 |
| Tx E/S Antenna Diameter | (m) 13.0 |
| Antenna Efficiency | (%) 65 |
| Tx E/S Antenna Gain | (dB) 65.7 |
| Tx E/S EIRP | (dBW) 80.2 |
| E/S Pointing Loss | (dB) 0.1 |
| Atmospheric Loss | (dB) 0.34 |
| Availability up | (%) 99.8 |
| Rain attenuation (ITU-R Rec. P.618-8) | (dB) 4.9 |
| Free Space Loss | (dB) 209.0 |