

ECHOSTAR-8 Link Budgets

Medium Power Mode

Link Parameters

1

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

Modulation Parameters:

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

30,719
5/6
188/204
30.2%
QPSK
20

Link Geometry:

Satellite Longitude (°East)
Tx E/S City Location (name)
Tx E/S Longitude (°East)
Tx E/S Latitude (°North)
Tx E/S Range to Satellite (Km)
Tx E/S Elevation to Satellite (°)
Tx E/S Altitude (m)
Rx E/S City Location (name)
Rx E/S Longitude (°East)
Rx E/S Latitude (°North)
Rx E/S Range to Satellite (km)
Rx E/S Elevation to Satellite (°)
Rx E/S Altitude (m)

-77.0
Cheyenne
-104.7
41.1
38,209
34.7
1876.0
Mexico City
-99.2
19.4
36,725
56.0
2240.0

Link (per carrier):

Carrier Frequency (MHz)
HPA Power Level (to give required PFD at satellite) (W)
HPA Power in dBW (dBW)
Post-HPA Losses (dB)
Tx E/S Power to Antenna in dBW (dBW)
Tx E/S Antenna Diameter (m)
Antenna Efficiency (%)
Tx E/S Antenna Gain (dB)
Tx E/S EIRP (dBW)
E/S Pointing Loss (dB)
Atmospheric Loss (dB)
Availability up (%)
Rain attenuation (dB)
Free Space Loss (dB)

17,550
26.8
14.3
2.0
12.3
13.0
65
65.7
78.0
0.1
0.34
99.9
2.7
209.0