

Comm carrier link budgets

24M0G7W		DVB-S	DVB-S	DVB-S	DVB-S
		D1	D1	D1	D1
Occupied bandwidth	MHz	24.0	24.0	24.0	24.0
Noise Bandwidth(symbol rate)	MHz	20.0	20.0	20.0	20.0
Uplink					
UL antenna gain (max. for 13m)	dBi	65.0	65.0	65.0	65.0
UL antenna input power	dBW	18.0	18.0	18.0	18.0
UL EIRP	dBW	83.0	83.0	83.0	83.0
UL EIRP density	dBW/Hz	10.0	10.0	10.0	10.0
Link loss	dB	210.0	210.0	210.0	210.0
Satellite G/T	dB/K	4.0	4.0	4.0	4.0
C/N(thermal)	dB	32.6	32.6	32.6	32.6
Downlink					
Sat. transmit antenna input power	dBW	21.0	21.0	21.0	21.0
Sat. transmit antenna gain	dBW	36.3	36.3	36.3	36.3
Sat. EIRP(max)	dBW	57.3	57.3	57.3	57.3
DL pattern loss	dBW	4.0	5.0	6.0	10.0
EIRP at RxES	dBW	53.3	52.3	51.3	47.3
EIRP density	dBW/Hz	-19.7	-20.7	-21.7	-25.7
Link loss	dB	206.2	206.2	206.2	206.2
RxES antenna diameter	m	0.45	0.60	0.90	1.20
RxES antenna gain (max)	dBi	34.4	36.9	40.4	43.0
RxES G/T (clear weather)	dB/K	12.9	15.4	18.9	21.5
Pointing loss	dB	0.5	0.5	0.5	0.5
Rain degradation	dB	5.0	5.0	6.0	7.0
C/N(thermal)	dB	10.6	12.1	13.6	11.2
Combined UL and DL					
C/I(XPOL in UL and DL)	dB	21.0	21.0	21.0	21.0
C/I(UL and DL), assumed worst case	dB	12.5	12.5	12.5	12.5
C/I tot	dB	11.9	11.9	11.9	11.9
C/(N+I)tot	dB	8.2	9.0	9.7	8.5
C/N required	dB	7.0	7.0	7.0	7.0
C/N margin	dB	1.2	2.0	2.7	1.5

DVB-S2	DVB-S2
D2	D2
24.0	24.0
20.0	20.0
65.0	65.0
18.0	18.0
83.0	83.0
10.0	10.0
210.0	210.0
4.0	4.0
32.6	32.6
21.0	21.0
36.3	36.3
57.3	57.3
5.0	5.0
52.3	52.3
-20.7	-20.7
206.2	206.2
0.45	0.60
34.4	36.9
12.9	15.4
0.5	0.5
6.0	7.0
8.6	10.1
21.0	21.0
12.5	12.5
11.9	11.9
6.9	7.9
5.2	5.2
1.7	2.7