

Comm carrier link budgets

	TID	1	2	3	4	5	6	7	8	9
24M0G7W										
Occupied bandwidth	MHz	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Noise Bandwidth(symbol rate)	MHz	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Uplink										
UL antenna gain (max. for 13m)	dBi	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
UL antenna input power	dBW	17.3	18.0	17.3	19.0	18.0	19.0	18.0	19.0	18.0
UL EIRP	dBW	82.3	83.0	82.3	84.0	83.0	84.0	83.0	84.0	83.0
UL EIRP density	dBW/Hz	9.3	10.0	9.3	11.0	10.0	11.0	10.0	11.0	10.0
Link loss	dB	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0
Satellite G/T	dB/K	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
C/N(thermal)	dB	30.5	31.2	30.5	32.2	31.2	32.2	31.2	32.2	31.2
Downlink										
Sat. transmit antenna input power	dBW	18.7	18.4	18.7	18.8	18.7	18.4	18.7	18.8	18.7
Sat. transmit antenna gain	dBW	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1
Sat. EIRP(max)	dBW	53.8	53.5	53.8	53.9	53.8	53.5	53.8	53.9	53.8
DL pattern loss	dBw	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
EIRP density	dBW/Hz	-20.2	-20.5	-20.2	-20.1	-20.2	-20.5	-20.2	-20.1	-20.2
Link loss	dB	206.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2
RxES antenna gain (max), for 45cm dish	dBi	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4
RxES G/T (clear weather)	dB/K	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
Pointing loss	dB	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Rain degradation	dB	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
C/N(thermal)	dB	9.7	9.4	9.7	9.8	9.7	9.4	9.7	9.8	9.7
Combined UL and DL										
C/I(XPOL in UL and DL)	dB	21.0	21.0	21.0	21.0	21.0	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	12.5	12.5	12.5	12.5	12.5
C/I tot	dB	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
C/(N+I)tot	dB	7.7	7.5	7.7	7.7	7.7	7.5	7.7	7.7	7.7
C/N required	dB	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
C/N margin	dB	0.7	0.5	0.7	0.7	0.7	0.5	0.7	0.7	0.7

	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
	19.0	18.0	19.0	18.0	19.0	18.0	19.0	18.0	19.0	17.5	19.0	17.5	19.0	17.5
	84.0	83.0	84.0	83.0	84.0	83.0	84.0	83.0	84.0	82.5	84.0	82.5	84.0	82.5
	11.0	10.0	11.0	10.0	11.0	10.0	11.0	10.0	11.0	9.5	11.0	9.5	11.0	9.5
	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0	210.0
	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	32.2	31.2	32.2	31.2	32.2	31.2	32.2	31.2	32.2	30.7	32.2	30.7	32.2	30.7
	18.4	18.7	18.8	18.7	18.4	18.7	18.7	18.7	18.9	18.9	18.9	18.9	18.9	18.9
	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1
	53.5	53.8	53.9	53.8	53.5	53.8	53.8	53.8	54.0	54.0	54.0	54.0	54.0	54.0
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	-20.5	-20.2	-20.1	-20.2	-20.5	-20.2	-20.2	-20.2	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
	206.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2
	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4
	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	9.4	9.7	9.8	9.7	9.4	9.7	9.7	9.7	9.9	9.9	9.9	9.9	9.9	9.9
	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
	7.5	7.7	7.7	7.7	7.5	7.7	7.7	7.7	7.8	7.8	7.8	7.8	7.8	7.8
	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
	0.5	0.7	0.7	0.7	0.5	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8

