

<b>General</b>	Unit	
User terminal type	-	Typ-150cm
Carrier designator	-	50MOG7W
Data rate (kbps)	(kbps)	102450
Coding rate	-	3/4
Modulation	-	8PSK
Occupied bandwidth	(kHz)	50000
Allocated bandwidth	(kHz)	50000
<b>Uplink</b>		
Beam		Feeder
Frequency	(GHz)	27.75
Earth Station EIRP	(dBW)	77.0
Antenna tx gain	dBi	68.7
Uplink power	(dBW)	8.3
<i>Uplink p.s.d.</i>	<i>(dBW/Hz)</i>	<i>-68.7</i>
Path loss	(dB)	213.0
Rain loss	(dB)	7.0
Mean Atmospheric loss	(dB)	1.2
Satellite G/T (EOC)	(dB/K)	8.1
Up-path C/No	(dBHz)	92.5
Up-path C/N	(dB)	15.5
<b>Downlink</b>		
	3	
Beam		User-Spot (HCP)
Frequency	(GHz)	19.45
Beam Peak to Edge of Coverage	(dB)	3.0
<i>Max pfd per crx @ earth surface(EOC)</i>	<i>(dBW/m2/1MHz)</i>	<i>-125.1</i>
Satellite EIRP (EOC)	(dBW)	54.0
Satellite EIRP density (EOC)	(dBW/Hz)	<i>-23.0</i>
Path loss	(dB)	209.9
Rain loss	(dB)	5.6
Mean Atmospheric loss	(dB)	0.7
User terminal G/T	(dB/K)	23.5
G/T degradation due to rain	(dB)	2.3
User terminal Pointing loss	(dB)	0.2
Co-Channel / adj . beam interf. (dn)	(dBHz)	100.0
Down-path C/No	(dBHz)	87.1
Down-path C/N	(dB)	10.1
<b>Total</b>		
Mean satellite C/Imo	(dBHz)	999.0
Mean Overall C/No	(dBHz)	86.0
Total C/I (adjacent satellite interference)	(dB)	22.6
Mean Overall C/N (incl. a.s.i)	(dB)	8.8
<b>Margin</b>		
C/N required	(dB)	8.5
C/N margin	(dB)	0.3

## C/I calculations

Orbital separation (interferor 1)	degree	2.0
Worst case topocentric angle (1)	degree	2.09

### **Uplink C/I**

Interferor 1		
Max. uplink p.s.d	(dBW/Hz)	-56.5
Other's sidelobe at 2 deg. sep $X-25\log(t)$		29.0
Tx Sidelobe gain at 2 deg sep	dBi	21.0
Inm-Ka C/I up1	<i>dB</i>	35.5

### **Downlink C/I**

Interferor 1		
Max. ground PFD	(dBW/m <sup>2</sup> /MHz)	-121.1
Max. downlink EIRP s.d	(dBW/Hz)	-19.0
Inm Rx sidelobe gain at 2 deg sep	dBi	21.0
Inm-Ka C/I dn1	dB	22.9
<b>Total C/I (adjacent satellite interference)</b>	<b>dB</b>	<b>22.6</b>