

S13.c.	K_A	K_B	K_C	K_D	K_E	K_F	K_G
	Digital TV MCPC 40 Mbps	Digital TV MCPC 32 Mbps	Digital TV SCPC	Digital TV SCPC	56 Kbps	1.544 Mbps	Digital TV MCPC 50 Mbps
Parameter	QPSK 3/4 RS	QPSK 3/4 RS	QPSK 3/4 RS	QPSK 3/4 RS	QPSK 3/4 RS	QPSK 3/4 RS	8PSK 3/4 RS
Carrier designation	36M0G7W	27M0G7W	6M95G1W	5M00G1W	100KG1W	1M60G1W	36M0G7W
Data Rate (dB-Hz)	76	75	69	67.6	47.5	61.9	77
Throughput rate (Mbps)	40	32	8	6	0.056	1.544	50
Symbol rate (Msps)	28.8	22.9	5.7	4.2	0.041	1.117	27.2
<b>Uplinks:</b>							
Transmit Power (dBW)	20	20	8.9	8.9	-2	8	20
Transmit Loss (dB)	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Antenna diameter (m)	6.1	6.1	3.7	3.7	1.8	1.8	6.1
Antenna Gain (dBi)	57.3	57.3	53.0	53.0	46.7	46.7	57.3
Ground Station EIRP (dBW)	74.8	74.8	59.4	59.4	42.2	52.2	74.8
Uplink Rain Loss (dB)	-2	-2	-2	-2	-2	-2	-2
Free Space Loss (dB)	-207	-207	-207	-207	-207	-207	-207
Satellite G/T (dB/K)	3	3	3	3	3	3	3
Boltzmann's Constant (dBW/K-Hz)	-228.6	-228.6	-228.6	-228.6	-228.6	-228.6	-228.6
Eb/N0 (dB)	21.4	22.4	13.0	14.4	17.3	12.9	20.4
Eb/I0 (dB)	18	18	16	16	16	16	18
Total Eb/(N0 + I0) (dB)	16.4	16.7	11.2	12.1	13.6	11.2	16.0
<b>Downlinks:</b>							
Satellite Carrier EIRP (dBW)	52.5	51.3	42.4	40.9	23.9	36.0	52.5
Interference bandwidth (MHz)	36	27	6.95	5	0.1	1.6	36
Satellite EIRP density (dBW/4KHz)	12.96	12.96	9.96	9.96	9.96	9.96	12.96
Downlink Rain Loss (dB)	-3	-3	-3	-3	-3	-3	-3
Free Space Loss (dB)	-205.4	-205.4	-205.4	-205.4	-205.4	-205.4	-205.4
Ground station antenna dia (m)	1.2	1.2	2.4	2.4	1.2	2.4	2.4
Ground Station G/T (dB/K)	20.9	20.9	26.9	26.9	20.9	26.9	26.9
Eb/N0 (dB)	17.6	17.4	20.5	20.5	17.5	21.2	22.6
C/IM (dB)			18	18	18	18	
Eb/Imo (dB)			16.6	16.6	16.6	16.6	
C/I (dB)	15	15	15	15	15	15	15
Eb/I0 (ASI) (dB)	13.6	13.6	13.6	13.6	13.6	13.6	12.3
Eb/I0 (dB)	13.6	13.6	13.6	13.6	13.6	13.6	12.3
Eb/(N0 + I0) (dB)	12.1	12.1	11.3	11.3	10.8	11.4	12.0
Total Up/Down Eb/(N0+Io)(dB)	10.8	10.8	8.2	8.7	9.0	8.3	10.5
Required Eb/N0 (dB)	5.4	5.4	5.4	5.4	5.4	5.4	7.2
Margin (dB)	5.4	5.4	2.8	3.3	3.6	2.9	3.3

<b>S13.d.</b>	<b>K_H</b>
	Ku-band
	Typical
Parameter	TV/FM link
Carrier designation	36M0F3F
<b>Uplinks:</b>	
Transmit Power (dBW)	22
Transmit Loss (dB)	-1
Antenna diameter (m)	6.1
Antenna Gain (dBi)	57.3
Ground Station EIRP (dBW)	78.3
Uplink Rain Loss (dB)	-2
Free Space Loss (dB)	-207
Satellite G/T (dB/K)	3
Bandwidth (dB-Hz)	75.6
Boltzmann's Constant (dBW/K-Hz)	-228.6
C/N, uplink (dB)	25.4
<b>Downlinks:</b>	
Satellite Carrier EIRP (dBW)	52.5
Downlink Rain Loss (dB)	-3
Free Space Loss (dB)	-205.4
Ground station antenna dia (m)	1.2
Ground Station G/T (dB/K)	20.9
C/N, DL (dB)	18.0
C/I ASI (dB)	18
C/Ntot, dB	15.0
Required (dB)	11
Margin (dB)	4.0

**CMD**

<b>S13.d.</b>	<b>K_TC</b>
Tx ES dia (typical), m	8.4
Tx ES gain, dBi	60.2
Tx ES antenna input power, dBW	10
Tx ES EIRP, dBW	70.2
Link loss, dB	207.5
Satellite G/T, dB/K	3
Command carrier bandwidth, MHz	0.8
Tx ES antenna input power density, dBW/Hz	-50
Carrier-to-Noise Ratio, dB	35.3
Required CNR, dB	10
Margin	25.3

**TLM**

<b>S13.d.</b>	<b>K_TM</b>
EIRP, dBW	19
Carrier bandwidth, MHz	0.4
EIRP density, dBW/4kHz	-1.00
Tx ES dia (typical), m	5.7
Rx ES antenna gain, dB	55.0
Rx ES G/T, dB/K	34.6
Rain fade, dB	8
CNR, dB	11.18
CNR (required), dB	9
Margin, dB	2.2