

HISPASAT-LINK BUDGET
DIGITAL SERVICES

REF. LINK			
TRANSPONDER N°			
SATELLITE	AMAZONAS	Rain	rain
	Clear Sky	up	down

GENERAL DATA

Transponder bandwidth (MHz)	54		
Carrier Type	IDR		
Modulation	QPSK		
Information rate (Kb/s)	45000	OVERHEAD	1
FEC	7/8	Reed Solomon	47/51
bandwidth occupied (KHz)	33483.28		
BER	1.00E-07		
Eb/No (dB)	6.5		
LINEALIZADOR (0=NO, 1=SI)	1		
N° of carrier	1.00	1.61	2.53
IBO total (dB)	3.00		
OBO total (dB)	2.248		
C/I intermodulation	18.808		
Occupation factor	1.32		
availability (%)	99.90		
Satellite Longitude	-61		

UPLINK

E/T Tx Name	New York	
E/T Tx Longitude (degrees E)	-74.00	
E/T Tx latitude (degrees N)	40.75	
E/T Tx Altitude (m)	100.00	
Uplink Frequency (GHz)	5.89	
EIRP, E/T Tx.(dBW)	74.00	7.03

E/T Tx Example		
H/PA (W)	1000.00	
H/PA-antenna loss (dB)	0.20	ES off axis psd (dBW/Hz)
Ant. gain (dB)	47.00	-48.25
Ant. Diameter (m)	4.50	

Polarization discr. (dB)	35.00	
Accuracy polarization (°)	0.10	
% unavailability		0.08000
Rain atte.		0.27
atmosph. Atten. loss(dB)	0.20	
Aiming error loss (dB)	0.30	
Sky loss (dB)	199.37	
D.F.P. (dBW/m2)	-96.03	-96.30
D.F.P. Saturation in the contour (dBW/m2)	-89.00	
Back-off input (dB)	7.03	7.30
geog. advantage (dB)	-7.00	
G/T satellite in the contour (dB/K)	-1.00	
C/N up (dB)	19.48	19.20
C/I cochannel up(dB)	24.89	24.62
C/(N+I without other interf. Satellites up (dB)	14.84	14.56
psd Interference from satellite 2°(dBW/Hz)	-38.70	
C/I with other interf. Satellites 2° up (dB)	15.98	15.70
c/(N+I) with other interf. Satellites up (dB)	12.36	12.08
Xpol. Interf. excess (dB)	3.0	

clear sky rain rain
up down

DOWNLINK

E/T Rx name	MIAMI	
E/T Rx Longitude (degrees E)	-80.18	
E/T Rx Latitude (degrees N)	25.77	
E/T Rx Altitude(Km)	100.00	
Down Frequency (GHz)	3.66	SAT deirp (dBW/Hz)
EIRP, satellite in the beam center (dBW)	41.00	-40.53
Back-off output (dB)	6.28	6.55
Geog. advantage (dB)	-5.00	
% unavailability		0.02
Rain atte.		0.16
atmosph. Atten. loss(dB)	0.20	
Aiming error loss (dB)	0.30	
Sky loss (dB)	195.06	
G/T E/T Rx. (dB/K)	30.00	29.28
E/T Rx Example		
Ant. Gain(dB)	48.78	
antenna-receptor loss(dB)	0.20	
Tlra (°K)	40.00	
Ta (°K)	20.00	
Tsyst. (°K)	72.15	
Ant. Diameter (m)	8.57	

Polarization discrim.(dB)	35.00	
C/N down (dB)	17.51	17.24
C/I cochannel down(dB)	25.65	25.65
C/I channel adjacent (dB)	24.70	24.70
C/(N+I without other interf. satellites down) (dB)	13.52	13.28
deirp Interference from satellite 2°(dBW/Hz)	-34.50	
C/I with other interf. Satellites 2° down (dB)	16.28	16.28
c/(N+I) with other interf. Satellites up (dB)	11.67	11.52
Xpolar Interference excess (dB)	2.2	

GLOBAL RESULTS

C/(N+I without other interf. satellites TOTAL) (	11.12	10.86	10.90
C/(N+I with other interf. satellites) Total (dB)	8.99	8.78	8.83
Excess margin (dB)	0.50	0.50	0.50
Eb/No available (interf nominal)(dB)	7.21	7.00	7.05
Eb/No request (dB)	6.50	6.50	6.50
Margin (nominal)(dB)	0.71	0.50	0.55