

HISPASAT-LINK BUDGET
DIGITAL SERVICES

REF. LINK TRANSPONDER N° SATELLITE	AMAZONAS Clear Sky	Rain up	Rain down
GENERAL DATA			
Transponder bandwidth(MHz)	36		
carrier type	outbound		
Modulation	QPSK		
Information rate (Kb/s)	2048	OVERHEAD	1
FEC	3/4	Reed Solomon	1
bandwidth occupied (KHz)	1638.40		
BER	1.00E-07		
Eb/No (dB)	8	Nº portadoras	
LINEALIZADOR (0=NO, 1=SI)	1	BW	POT
Nº of carriers	18.00	18.83	22.54
IBO total (dB)	3.00		
OBO total (dB)	2.321		
C/I intermodulation	18.063		
Occupation factor	1.32		
availability (%)	99.50		
satellite longitude	-61		

UPLINK	
E/T Tx Name	new York
E/T Tx (degrees E) Longitude	-74.00
E/T Tx (degrees N) latitude	40.75
E/T Tx (m) Altitude	100.00
Uplink Frequency (GHz)	14.00
EIRP E/T Tx.(dBW)	62.50

E/T Tx example	
HPA (W)	100.00
HPA-antena (dB) loss	0.20
Ant. gain (dB)	53.00
Ant. Diameter (m)	3.70

ES off axis psd (dBW/Hz)

-52.64

Polarization discrim (dB)	30.00		
Accuracy polarization(°)	0.10		
% unavailability		0.12000	
Rain atten.		3.23	
Atmosp. Atten. loss (dB)	0.20		
aiming error loss (dB)	0.30		
sky loss (dB)	206.90		
D.F.P. (dBW/m2)	-104.53	-107.76	
saturation D.F.P.in the BEAM CENTER (dBW)	-88.00		
Back-off Input (dB)	16.53	19.76	
Geogr. advantage (dB)	-4.00		
G/T satellite in the BEAM CENTER (dB/K)	4.70		
CIN up (dB)	22.25	19.03	
C/I cochannel up(dB)	22.34	19.11	
C/(N+I without other interf. satellites up) (dB)	17.42	14.19	
psd Interference from satellite 2º(dBW/Hz)	-50.00		
C/I with other interf. Satellites 2º up (dB)	28.88	25.66	
c/(N+I) with other interf. Satellites up (dB)	17.12	13.89	
Xpolar Interference excess (dB)	3.0		

	Clear sky	Rain up	rain down
DOWNLINK			
E/T Rx Name	MIAMI		
E/T Rx (degrees E) Longitude	-80.18		
E/T Rx (degrees N) Latitude	25.77		
E/T Rx (Km) Altitude	100.00		
Down Frequency (GHz)	12.00		SAT deirp (dBW/Hz)
EIRP satellite in the beam center (dBW)	48.00		-29.99
Back-off output (dB)	15.85	19.08	
Geogr. advantage (dB)	-5.00		
% unavailability			0.38000
Rain Atten.			2.12
Atmosp. Atten. loss (dB)	0.20		
aiming error loss (dB)	0.30		
sky loss (dB)	205.37		
G/T E/T Rx. (dB/K)	30.00		26.04
E/T Rx Example			
Ant. Gain(dB)	48.62		
antenna-receptor loss(dB)	0.10		
Tlna (°K)	45.00		
Ta (°K)	20.00		
Tsyst. (°K)	71.15		
Ant. Diameter (m)	2.57		

Polarization discrim.(dB)	30.00		
CIN down (dB)	17.73	14.51	11.66
C/I cochannel down(dB)	22.52	22.52	22.52
C/I channel adjacent (dB)	24.70	24.70	24.70
C/(N+I without other interf. satellites down) (dB)	14.35	11.72	10.55
deirp Interference from satellite 2º(dBW/Hz)	-30.00		
C/I with other interf. Satellites 2º down (dB)	22.15	22.15	20.04
c/(N+I) with other interf. Satellites up (dB)	13.68	11.35	10.09
Xpolar Interference excess (dB)	2.3		

GLOBAL RESULTS

C/(N+I without other interf. satellites TOTAL)	12.61	9.77	9.74
C/(N+I with other interf. satellites) Total (dB)	12.06	9.42	9.30
Excess margin (dB)	0.50	0.50	0.50
Eb/No available (interf nominal)(dB)	10.59	7.95	7.83
Eb/No request (dB)	8.00	8.00	8.00
Margin (nominal)(dB)	2.59	-0.05	-0.17