

HISPASAT-LINK BUDGET
DIGITAL SERVICES

REF. LINK
TRANSPONDER N°
SATELLITE

AMAZONAS
Clear Sky Rain up rain down

GENERAL DATA

Transponder bandwidth (MHz)	54		
Carrier Type	IDR		
Modulation	8-psk		
Information rate (Kb/s)	64	OVERHEAD	15/16
FEC	2/3	Reed Solomon	67/73
bandwidth occupied (KHz)	44.63		
BER	1.00E-07		
Eb/No (dB)	6.7		
LINEALIZADOR (0=NO, 1=SI)	1		
N° of carrier	1210.00	1210.00	799.70
IBO total (dB)	3.00		
OBO total (dB)	2.248		
CI 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)	49.00	1.20	

E/T Tx Example

HPA (W)	8.00		
HPA-antenna loss (dB)	0.20	ES off axis psd (dBW/Hz)	
Ant. gain (dB)	47.00	-44.50	
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)	-121.03	-121.30	
D.F.P. Saturation in the contour (dBW/m2)	-89.00		
Back-off input (dB)	32.03	32.30	
geog. advantage (dB)	-7.00		
G/T satellite in the contour (dB/K)	-1.00		
C/N up (dB)	23.23	22.96	
CI cochannel up(dB)	24.89	24.62	
C/(N+I) without other interf. Satellites up (dB)	18.04	17.76	
psd Interference from satellite 2°(dBW/Hz)	-38.70		
CI with other interf. Satellites 2° up (dB)	19.73	19.45	
c/(N+I) with other interf. Satellites up (dB)	15.79	15.52	
Xpol. Interf. excess (dB)	3.0		

clear sky rain up rain 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	-36.77	
Back-off output (dB)	31.28	31.55	
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)	195.08		
G/T E/T Rx. (dB/K)	24.50		23.78

E/T Rx Example

Ant. Gain(dB)	43.28		
antenna-receptor loss(dB)	0.20		
Tlna (°K)	40.00		
Ta (°K)	20.00		
Tsyst. (°K)	72.15		
Ant. Diameter (m)	4.55		

Polarization discrim.(dB)	35.00		
C/N down (dB)	15.77	15.49	14.90
CI cochannel down(dB)	25.65	25.65	25.65
CI channel adjacent (dB)	24.70	24.70	24.70
C/(N+I) without other interf. satellites down) (dB)	13.84	13.60	13.26
deirp Interference from satellite 2°(dBW/Hz)	-34.50		
CI with other interf. Satellites 2° down (dB)	14.54	14.54	14.38
c/(N+I) with other interf. Satellites up (dB)	11.16	11.03	10.77
Xpolar Interference excess (dB)	2.2		

GLOBAL RESULTS

C/(N+I) without other interf. satellites TOTAL) (12.44	12.19	12.01
C/(N+I) with other interf. satellites) Total (dB)	9.88	9.71	9.58
Excess margin (dB)	0.50	0.50	0.50
Eb/No available (interf nominal)(dB)	7.81	7.65	7.52
Eb/No request (dB)	6.70	6.70	6.70
Margin (nominal)(dB)	1.11	0.95	0.82