

HISPASAT-LINK BUDGET  
DIGITAL SERVICES

REF. LINK  
TRANSPONDER Nº  
SATELLITE

AMAZONAS  
Clear Sky      Rain up      rain down

GENERAL DATA

Transponder bandwidth (MHz)	54		
Carrier Type	IDR		
Modulation	8-psk		
Information rate (Kb/s)	2048	OVERHEAD	15/16
FEC	2/3	Reed Solomon	67/73
bandwidth occupied (KHz)	1428.10		
BER	1.00E-07		
Eb/No (dB)	6.7		
LINEALIZADOR (0=NO, 1=SI)	1		
Nº of carrier	37.00	37.81	10.07
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)	68.00	-2.65	

E/T Tx Example

HPA (W)	1000.00		
HPA-antenna loss (dB)	0.20	ES off axis psd (dBW/Hz)	
Ant. gain (dB)	47.00	-40.55	
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)	-102.03	-102.30	
D.F.P. Saturation in the contour (dBW/m2)	-89.00		
Back-off input (dB)	13.03	13.30	
geog. advantage (dB)	-7.00		
G/T satellite in the contour (dB/K)	-1.00		
C/N up (dB)	27.18	26.90	
CI cochannel up(dB)	24.89	24.62	
C/(N+I without other interf. Satellites up (dB)	20.83	20.55	
psd Interference from satellite 2º(dBW/Hz)	-38.70		
CI with other interf. Satellites 2º up (dB)	23.68	23.40	
c/(N+I) with other interf. Satellites up (dB)	19.01	18.74	
Xpol. Interf. excess (dB)	3.0		

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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	-32.82	
Back-off output (dB)	12.28	12.55	
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)	18.90		18.18

E/T Rx Example

Ant. Gain(dB)	37.68		
antenna-receptor loss(dB)	0.20		
Tlna (°K)	40.00		
Ta (°K)	20.00		
Tsyst. (°K)	72.15		
Ant. Diameter (m)	2.39		

Polarization discrim.(dB)	25.00		
C/N down (dB)	14.12	13.84	13.24
CI cochannel down(dB)	19.61	19.61	19.61
CI channel adjacent (dB)	24.70	24.70	24.70
C/(N+I without other interf. satellites down) (dB)	12.47	12.26	11.86
deirp Interference from satellite 2º(dBW/Hz)	-34.50		
CI with other interf. Satellites 2º down (dB)	12.88	12.88	12.73
c/(N+I) with other interf. Satellites up (dB)	9.66	9.55	9.26
Xpolar Interference excess (dB)	2.2		

GLOBAL RESULTS

C/(N+I without other interf. satellites TOTAL) (c)	11.88	11.66	11.34
C/(N+I with other interf. satellites) Total (dB)	9.19	9.06	8.82
Excess margin (dB)	0.50	0.50	0.50
Eb/No available (interf nominal)(dB)	7.12	6.99	6.76
Eb/No request (dB)	6.70	6.70	6.70
Margin (nominal)(dB)	0.42	0.29	0.06